

Advanced Purified Water Facility at American Flat Project

December 6, 2023

WaterSMART

Title XVI WIIN Act Water Reclamation
and Reuse Projects for FY 2023 & 2024
Funding Opportunity: R23AS00464

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List of Acronyms and Abbreviations

AF	acre-foot/acre-feet	NRHP	National Register of Historic Places
AFA	acre-feet annually	NVCRIS	Nevada Cultural Resource Information System
AFY	acre-feet per year	O&M	operation and maintenance
AMMs	avoidance and minimization measures	OM&R	operation, maintenance, and repair
APE	area of potential effects	PFAS	per- and polyfluoroalkyl
APW	advanced purified water	PFOA	Perfluorooctane acid
APWF	advanced purified water facility	PFOS	Perfluorooctane sulfonic acid
ARNG	Army National Guard	PLPT	Pyramid Lake Paiute Tribe
ASR	aquifer storage and recovery	Program	Advanced Purified Water Program
BACF	biological activated carbon filtration	Project	American Flat Project
BMPs	best management practices	RCP	Representative Concentration Pathway
BWPC	Bureau of Water Pollution Control	Reclamation	United States Bureau of Reclamation
EPA	United States Environmental Protection Agency	RO	reverse osmosis
ER	Environmental Review	RSWRF	Reno-Stead Water Reclamation Facility
ESA	Environmental Site Assessment	SCADA	supervisory control and data acquisition
EUAC	equivalent uniform annual cost	SHPO	State Historic Preservation Office
Fish Springs Ranch	Fish Springs Ranch Groundwater Importation Project	SRF	State Revolving Funds
GIS	geographic information system	SWPPP	Stormwater Pollution Prevention Plan
MCL	maximum contamination level	TMDLs	Total Maximum Daily Loads
M&I	municipal and industrial	TMWA	Truckee Meadows Water Authority
MG	million gallon(s)	TRIGID	Tahoe-Reno Industrial General Improvement District
MGD	million gallons per day	TROA	Truckee River Operating Agreement
mg/L	milligrams per liter	UNR	University of Nevada, Reno
NAC	Nevada Administrative Code	UIC	underground injection control
NDEP	Nevada Division of Environmental Protection	USDA	US Department of Agriculture
NDWR	Nevada Division of Water Resources	WIFIA	Water Infrastructure Finance and Innovation Act
Ng/L	nanograms per liter	WOTUS	waters of the United States
NNPH	Northern Nevada Public Health		
NOFO	Notice of Funding Opportunity		
NPV	net present value		

Technical Proposal

This funding application for the Advanced Purified Water Facility at American Flat Project (Project) prepared by the Truckee Meadows Water Authority (TMWA) is submitted to the United States Bureau of Reclamation (Reclamation) under the Department of Interior in response to the WaterSMART Title XVI WIIN Act Water Reclamation and Reuse Projects Notice of Funding Opportunity (NOFO) No. R23AS00464 for fiscal year 2023.

Date: December 6, 2023

Applicant: Truckee Meadows Water Authority

Project Name: Advanced Purified Water Facility at American Flat Project

City, County, State: Reno, Washoe County, Nevada

Executive Summary

The Advanced Purified Water Facility (APWF) at American Flat Project (Project) has been developed by multiple local partners, including Truckee Meadows Water Authority (TMWA) and City of Reno to increase and protect the region's water supply in northern Nevada to address climate change impacts, maximize efficiency of water rights uses in the system, and provide an effluent disposal option to decrease environmental discharges to a closed basin playa lake prone to flooding. The region is an arid high-desert community that is experiencing significant, ongoing development and population growth. In the near-term there are sufficient water supplies, but to be able to adequately address future growth, more severe and prolonged droughts, and climate change impacts, the region is seeking to diversify and expand its water resource portfolio. Additionally, the region faces effluent management challenges that inhibit or prevent future growth and development in certain areas. These water supply and effluent management challenges have led to the development of the Project, which will be the first indirect potable reuse project in Nevada.

The Project is a multi-benefit solution that will provide a new drought-proof water supply to support approximately 4,750 new homes in the region and create effluent disposal capacity to support approximately 12,100 new service connections. The Project will use effluent from a local water reclamation facility, treat it to advanced purified water (APW) standards, inject it into a local aquifer, and extract it for future use. TMWA and the City of Reno are currently working on the design phase of the Project with an anticipated Project completion date of 2027. The Project is *not* located on a federal facility and will *not* involve federal land.

Eligible Project costs are \$209,370,012, and TMWA is seeking a \$30,000,000 Title XVI WIIN Act Grant. These funds will be used to complete design work and for construction of the APWF, upgraded water treatment facilities, pump station improvements, wells, and conveyance pipelines. The Project's total benefits have been calculated to be nearly \$590 million which demonstrates the importance to the region. The Project will create a drought-resistant local water supply to address future climate change impacts and provide a range of environmental and economic benefits to northern Nevada.

Technical Project Description

Project Location

The Advanced Purified Water Facility at American Flat Project (Project) is located in the City of Reno in northern Nevada. More specifically, the Project is in the Reno-Stead/Lemmon Valley area, referred to as the **North Valleys**, which is approximately 10 miles north of Downtown Reno (**Figure 1**). Washoe County has approximately 475,000 residents, with the majority located in the Reno-Sparks metropolitan area, also known as the Truckee Meadows. Truckee Meadows Water Authority (TMWA) is the regional water purveyor, serving approximately 440,000 customers with over 130,000 service connections. Based on regional forecasts, the population of Washoe County is projected to increase by over 20% to approximately 570,000 people by 2040. Currently, the region's water supply portfolio includes the Truckee River which accounts for 80-85% of the water supply, with groundwater providing the remaining 15-20% from TMWA's 90 production wells.

Truckee River water is available through a series of upstream reservoirs and dams. These include federally operated dams and reservoirs, including Lake Tahoe, Stampede, Boca, and Prosser Reservoirs. Additionally, TMWA operates dams on Donner Lake and Independence Lake. The coordination and operation of these dams and reservoirs is consistent with the Truckee River Operating Agreement (TROA) and is overseen by a federal watermaster. Surface water availability is heavily dependent on snowpack.

Of TMWA's 130,000 service connections, approximately 9,200 service connections are in the North Valleys area. Drinking water supplies for these customers is sourced from the Truckee River, groundwater from TMWA's production wells in the North Valleys, and groundwater from the Fish Springs Ranch Groundwater Importation Project (Fish Springs Ranch). The North Valleys area is outside of the Truckee River watershed and under TROA only 3,000 acre feet (AF) of Truckee River water may be exported to the North Valleys without a significant amount of water rights for return flow being dedicated. As shown in **Figure 1**, the Nevada Division of Water Resources (NDWR) identifies two groundwater hydrographic basins in the Project area – 92A West Lemmon Valley and 92B East Lemmon Valley. A geologic fault divides the west and east basins. Together, the west and east groundwater basins encompass an area of 93 square miles.

For wastewater treatment, the North Valleys is served by the Reno Stead Water Reclamation Facility (RSWRF), operated by the City of Reno, which has recently been expanded to treat 4 million gallons per day (MGD) and serves approximately 10,700 homes. Treated effluent from the regional wastewater facility, RSWRF, is either discharged to Swan Lake which is a closed basin playa lake, or is used for irrigation by reuse customers such as parks and golf courses. RSWRF is expected to serve over 12,500 homes by 2040 based on Truckee Meadows Regional Planning Agency's "Consensus Forecast". Washoe County is also planning to decommission the Lemmon Valley Water Reclamation Facility, which will create an additional 4,500 homes that will need to be served by RSWRF. This creates an effluent management issue that must be solved in order to facilitate additional growth in the North Valleys area.

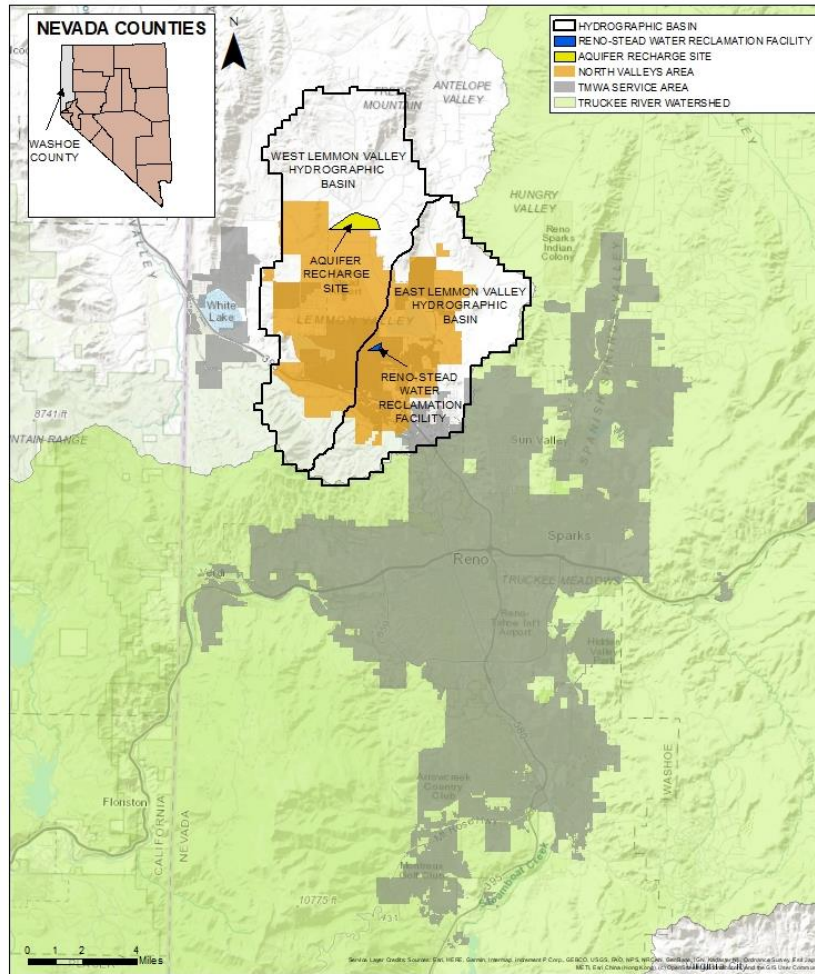


Figure 1. Project Location Map

Regional Water Management Challenges and Opportunities

There are a range of water management challenges in the Truckee Meadows region due to factors such as population growth and climate change. The Project provides a multi-benefit solution to address several key water resource challenges in the region, as described below.

Water Supply Reliability and Resiliency in the Region

Since the region relies so heavily on the Truckee River and upstream dams and reservoirs to meet its water supply needs, it is critical to develop additional drought-resilient, off-river water resources. While the climate of the Truckee Meadows is characterized by cyclical patterns of high and low precipitation, changing future climatic conditions may prove more challenging for water supply reliability in the region. Water resources within the Truckee River watershed are primarily derived from snowpack accumulated during the winter season. The region expects temperatures to continue to warm, more frequent or extended drought periods, and a transition from river flows derived from melting snowpack to rainfall.

TMWA and regional partners have been investigating options to address future water supply shortages, and groundwater banking is one of the best drought resiliency strategies in the region. Groundwater banking can provide the Truckee Meadows with a reliable water resource that is not susceptible to evaporation, which will

be critical with more intense droughts anticipated under climate change. The Project will provide a new water supply and groundwater bank that can be relied on during even the most severe drought periods.

TMWA's existing production wells in the West Lemmon Valley hydrographic basins have supply limitations because of aquifer drawdown due to nearby domestic well owners and water quality concerns. There are over four hundred domestic wells in the West Lemmon Valley hydrographic basin and the Project will help improve groundwater levels and support sustainable future groundwater pumping. The Project will reduce TMWA's reliance on the existing production wells by providing an alternative source of supply. Additionally,

Truckee River Surface Water Rights Constraints to the North Valleys Area

The Truckee River system is regulated by TROA, which places unique constraints on the use of treated effluent and the use of Truckee River water outside the Truckee River watershed. Unlike most regions, effluent derived from surface water must be returned to the Truckee River after it has been treated. Additionally, water used outside the Truckee River watershed is reduced to only the amount of a water right that can be consumptively used. The North Valleys area is outside the Truckee River watershed, and treated effluent at RSWRF is not returned to the Truckee River.

Development is projected to continue in the North Valleys area, so new water resources are necessary to meet future demand. Historically, the amount of Truckee River water that serves the North Valleys has been limited to approximately 3,000 acre feet annually (AFA), due to the fact that the effluent cannot be returned to the Truckee River. If Truckee River water beyond the 3,000 AFA is sent to the North Valleys area, for every acre foot needed, it would require an additional 0.61 AF to be dedicated. These extra water rights are to make up for the non-consumptive use that cannot be returned to the Truckee River.

The Truckee River is a limited resource, and it is an inefficient use of water rights for the entire system to commit an additional 60% of water needed in order to send water resources outside of the watershed. The Project will increase the efficient use of limited water rights and resources for TMWA's entire service area and will specifically provide the North Valleys area with a *net new water supply* that can support approximately 4,750 new homes.

Additionally, there are threatened and endangered species in the Truckee River watershed, including two fish species: the Lahontan cutthroat trout and the Cui-ui. By importing water to the North Valleys area from the Truckee River, less water would remain in the river to flow downstream to support those species. By creating a new source of supply through indirect potable reuse for the North Valleys area, the entire Truckee River watershed benefits.

Wastewater Effluent Disposal Limitations

Since the Truckee River watershed is isolated from the ocean, wastewater disposal is a challenge throughout the Truckee Meadows region due to water quality and quantity concerns. In the North Valleys area, wastewater effluent from RSWRF is discharged to Swan Lake, which is a closed basin playa lake that has experienced flooding in recent years, causing property damage and impacts to the area residents' quality of life. During 2017, the largest water year on record, there was unprecedented flooding in the North Valleys area leading to years of issues that had to be mitigated.

The Nevada Division of Environmental Protection (NDEP) has established the permitted wastewater treatment capacity of RSWRF at 2.5 MGD, even though the actual treatment capacity is 4.0 MGD, until a new effluent management strategy is developed and permitted. Wastewater effluent management capacity currently limits the area's residential and commercial development, which in turn limits economic growth and diversification. The Project will provide 2 MGD AFA of effluent management capacity to RSWRF, which

enables NDEP to increase RSWRF wastewater treatment capacity to 4 MGD, thereby supporting approximately 12,100 new residential and commercial wastewater service connections within the North Valleys area. The Project provides an opportunity to provide a solution that will reduce RSWRF discharges to Swan Lake and provide a net new water supply for the North Valleys area.

Addressing the Challenges: Advanced Purified Water Facility at American Flat

Project Development

To address the aforementioned water management challenges in the Truckee Meadows, regional entities have been working to find multi-benefit opportunities. Starting in 2017, TMWA, City of Reno, and other agencies collaborated under OneWater Nevada to begin conducting a feasibility study to assess whether the State of Nevada's "A+" reclaimed water category could offer significant water resource management benefits including improving efficiency, providing flexibility during periods of water scarcity, and diversifying the region's water supply portfolio. Indirect potable reuse was not historically considered viable largely because there was not a clear regulatory pathway established in Nevada. In December 2016, following a comprehensive two-year, state-wide collaborative process, the State of Nevada adopted revised reclaimed water regulations, which for the first time established a regulatory framework for implementing indirect potable reuse for groundwater augmentation.

OneWater Nevada completed the Northern Nevada Indirect Potable Reuse Feasibility Study in March 2019. The Study was conducted and drafted to meet the requirements as defined under section 1604 of Pub. L. 102-75 and was found to meet US Bureau of Reclamation Title XVI Feasibility Study requirements. Washoe County was the lead agency and designated project sponsor with respect to the Reclamation funding opportunity.

TMWA completed the American Flat Hydrogeologic Investigation Report in August 2019 and determined that the American Flat site is favorable for aquifer storage and recovery (ASR). An APW demonstration study at RSWRF was completed in November 2020 by OneWater Nevada in collaboration with the Nevada Water Innovation Institute. This demonstration study successfully achieved APW quality, demonstrated groundwater injection and recovery, and validated the capabilities of advanced water treatment technologies. Based on the successful demonstration study results, approvals for funding the Project were made in 2022 by partner agencies, and facilities and systems design are currently underway.

Project Objectives

The Project will diversify the region's water supply and prove up a technology that can be used elsewhere in the Truckee Meadows in the future to further increase water resources for the region. It will store 2,000 AFA of APW underground, which will provide additional drought backup and a consistent source of supply, even during the worst droughts. The Project will provide an important off-river resource to increase the community's drought resiliency, maximize the efficient use of limited Truckee River resources for the region, and provide a long-term effluent disposal option to limit discharges to Swan Lake.

TMWA will issue will-serve letters for the 2,000 AF as a new water supply, which will supplement supply for TMWA's existing water resources in the North Valleys. The Project helps stretch existing supplies in the North Valleys and adds additional operational flexibility to TMWA for the remainder of its service area. The 2,000 AF of storage in the Project is effectively drought proof and does not suffer any evaporative losses. Until the entire 2,000 AF is needed to meet its commitments, TMWA will leave the newly created APW in the groundwater basin, providing up to 11,000 AF of banked water that can be managed to help meet water

demand during both normal and drought conditions. Local area groundwater demands will be reduced, thereby improving aquifer drawdown for domestic well owners and helping manage water quality concerns.

In summary, the Project seeks to meet the project objectives shown in **Table 1**.

Table 1. Advanced Purified Water Facility at American Flat Project Objectives

PROJECT OBJECTIVES
<ul style="list-style-type: none"> Establish a net new water supply of 2,000 AFA in the North Valleys to address the area’s unique water management challenges and allow for future growth even with heightened competition for existing surface and groundwater resources in the region.
<ul style="list-style-type: none"> Maximize the efficient use of limited Truckee River water resources by ensuring an additional 2,000 AFA is not exported to the North Valleys area.
<ul style="list-style-type: none"> Create a groundwater bank of up to 11,000 AF to develop additional locally controlled and drought-proof water supplies for TMWA’s entire service area.
<ul style="list-style-type: none"> Reduce wastewater effluent environmental discharges and mitigate flooding to Swan Lake, a closed-basin playa, by 2 MGD and create a new wastewater disposal option for the North Valleys.
<ul style="list-style-type: none"> Implement the first indirect potable reuse project in Nevada to pave the way for future APW projects in the region using treatment technologies with a minimized waste stream to address brine disposal limitations.
<ul style="list-style-type: none"> Create a new water supply that can serve approximately 4,750 new residential services and an effluent management solution that can provide capacity for approximately 12,100 new homes.
<ul style="list-style-type: none"> Mitigate anticipated climate change impacts by providing a new reliable, off-river water supply for TMWA’s customers.

American Flat Project Description

The Project will be a 2 MGD field-scale groundwater recharge project. It will include upgraded treatment facilities at RSWRF, an APWF to be built adjacent to the RSWRF site, conveyance pipelines, pump station improvements, and injection and extraction wells.

RSWRF, owned and operated by City of Reno, is designed to treat an average annual daily flow of 4 MGD; however, the RSWRF discharge permit currently limits flows (due to effluent management) to an average annual flow of 2.5 MGD based on the interim flow shave which is currently being operated. RSWRF operates in full compliance with the requirements of the Authorization to Discharge Permit issued to the City of Reno by the NDEP. The facility produces high-quality effluent meeting the State of Nevada category A reclaimed water quality requirements. Reclaimed water uses include irrigation of community parks and sports fields, dust control at construction sites, and support of the Swan Lake wetlands. RSWRF unit processes include a headworks, secondary wastewater treatment, tertiary filtration, disinfection, effluent management, and waste biosolids management.

The Projects’ water infrastructure locations, as shown in **Figure 2**, include upgraded treatment processes at RSWRF, an APW facility including finished water polishing processes, a conveyance pump station, a transmission pipeline, and injection, monitoring, and extraction wells.



Figure 2. American Flat Project Elements Overview

Category A+ reclaimed water quality, as defined by the Nevada Administrative Code (NAC) 445A, is suitable for all Nevada water recycling practices. TMWA, in collaboration with OneWater Nevada, selected an ozone, biological filtration based treatment system. These treatment processes were selected over reverse osmosis (RO) based treatment processes, due to no RO concentrate (brine) production, significant savings in capital and operating costs, lower energy requirements, and lesser treatment chemical consumption.

Source water to the APWF is high-quality filtered and disinfected effluent from RSWRF. The source water will be conveyed to an adjacent site for advanced treatment. At this location, the water will be treated with an innovative process utilizing ozone oxidation and biological filtration, effectively reducing pathogens and chemicals of emerging concern, such as pharmaceuticals, which persist at trace levels in the RSWRF effluent as shown in **Figure 3**. The water will undergo further polishing and disinfection using granular activated carbon filtration, per- and polyfluoroalkyl (PFAS) adsorption, and ultraviolet light disinfection treatment processes. From this facility, the water will be conveyed by pipeline approximately 7 miles to an undeveloped, rural site. There, the APW will be piped to on-site recharge wells, where it will be injected into the groundwater aquifer and stored for future use. Aquifer storage is required by the regulations for A+ water and offers the benefits of not being subject to evaporative losses like a reservoir and further enhances water quality through natural processes.

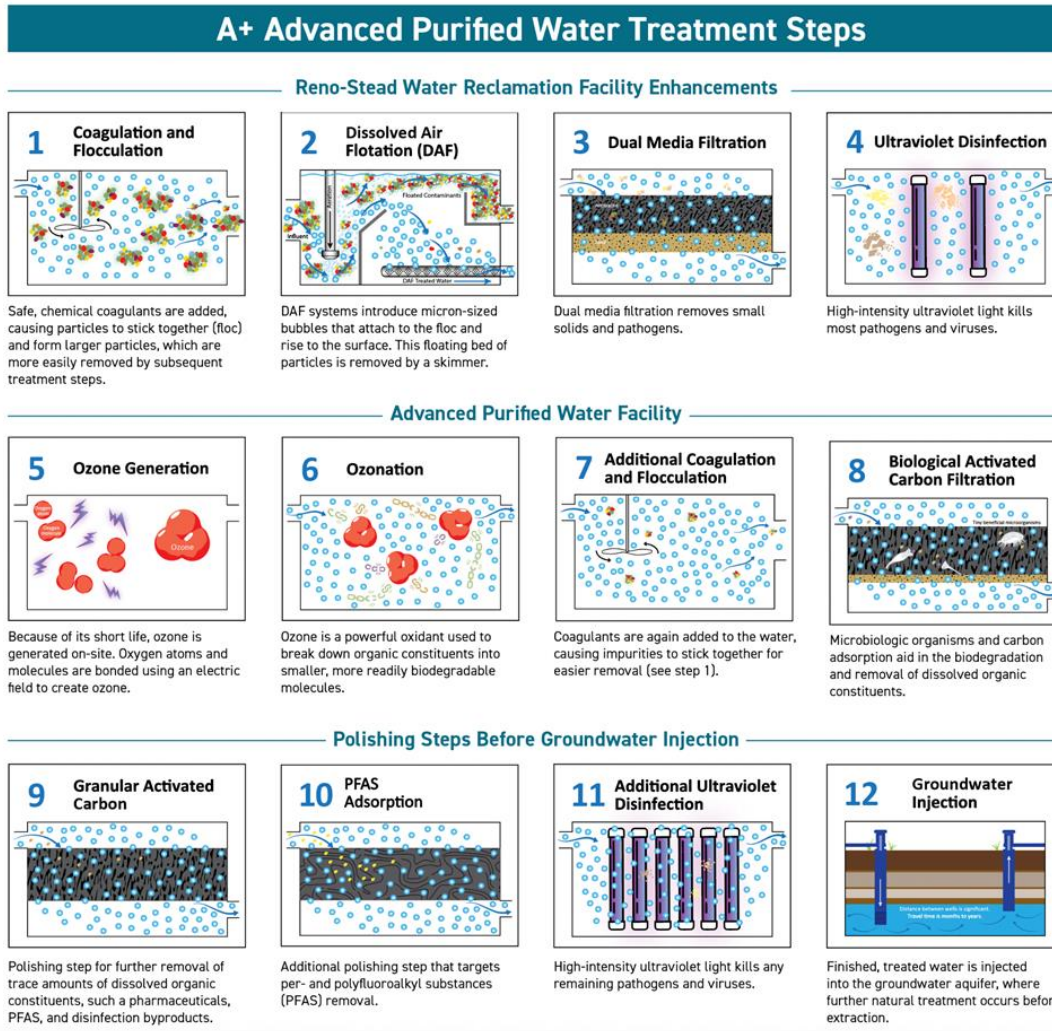


Figure 3. Proposed Advanced Purified Water Treatment Process

Planning, environmental studies, cultural resource evaluations, engineering design, project delivery, construction permitting, land acquisition and right-of-way, funding, operator training, public outreach, partnership agreements, and additional research efforts are well developed. Local political jurisdictions, Nevada’s congressional delegates, regional public agencies, local community groups, Northern Nevada Public Health (formerly Washoe County Health District) (NNPH), and the Nevada Department of Conservation and Natural Resources have expressed enthusiasm for the Project.

Project Schedule

Key Project milestones, including both past and future activities, is included in **Figure 4**.

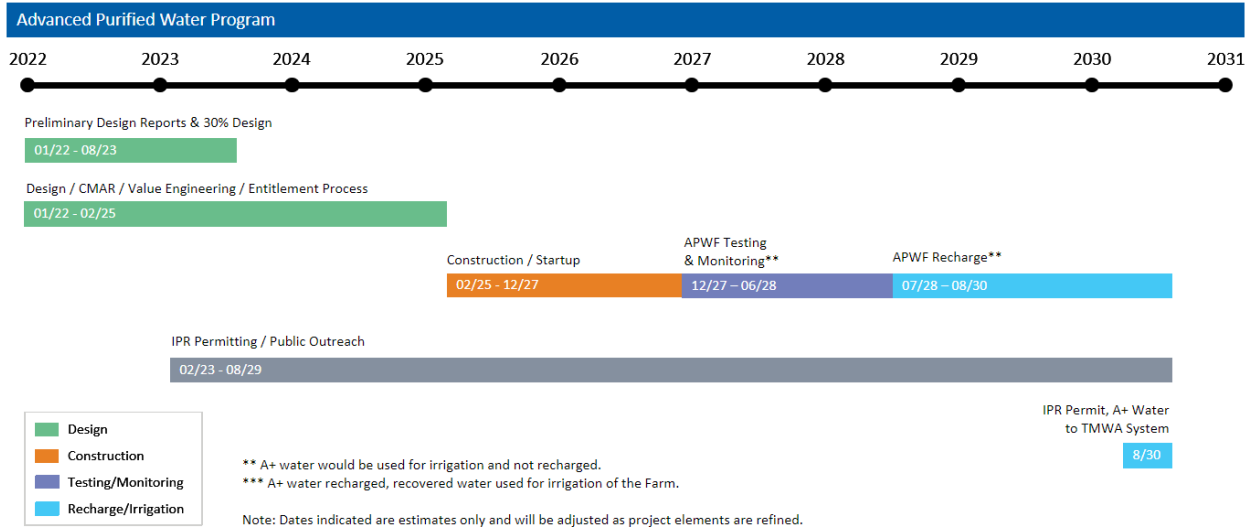


Figure 4. American Flat Project Schedule

Evaluation Criteria

Evaluation Criterion 1 – Water Supply

Subcriterion No. 1a – Stretching Water Supplies

1. How many acre-feet of water are expected to be made available each year upon completion of the Project? What percentage of the present and/or future annual demand in the project sponsor’s service area will the Project’s reclaimed water be expected to provide upon Project completion?

The American Flat Project will produce **2,000 AF** of water per year by using municipal effluent from RSWRF, treating it to APW standards, injecting it into the aquifer, and pumping it for potable use. The Project water is a new water supply that will allow TMWA to issue will-serve commitments for the North Valleys. Currently, the only water resources available for will serve commitments in the North Valleys is groundwater from the Fish Springs Ranch. Increasing competition for the Fish Springs Ranch water will limit its availability for future development in the North Valleys.

For TMWA’s entire service area, the current annual demand for potable water is approximately 88,000 AFA. This Project would produce about 2% of the total annual potable water demand of the entire service area. While the Project produces a relatively small amount in relation to TMWA’s entire annual demand, it will provide a critical resource to increase drought resiliency in the North Valleys area. The North Valleys area is currently served by imported Truckee River water, groundwater from TMWA’s production wells in the East and West Lemmon Valley hydrographic basins, and imported groundwater from Fish Springs Ranch. The Project will provide an additional 2,000 AFA and extend the North Valley area’s existing 7,500 AFA of uncommitted groundwater supply by approximately 25%. As shown in **Table 2**, TMWA currently has approximately 9,200 service connections in the North Valleys, which represents approximately 7% of TMWA’s entire customer base. The 2,000 AFA of Project water would be 47% of the current total demand in the North Valleys. Additionally, water demand is increasing in the North Valleys with extensive industrial development in the region, including production facilities, warehouses, and logistics centers, which is an important economic driver for the Truckee Meadows. The 2,000 AF provided through the Project is a drought-proof resource because it is a new potable water source created from treated municipal effluent from RSWRF.

Table 2. Summary of TMWA's Current Water Demand

Water Demand	Current
TMWA Service Area Total Water Demand (AF)	88,000
North Valleys Water Demand (AF)	4,235
American Flat Project (AF)	2,000
Project Water Percentage of North Valleys Demand	47%

The Project will also provide the capacity to bank groundwater beyond the 2,000 AF. Until the entire 2,000 AF is needed to meet TMWA's commitments for future development, TMWA will leave the newly created APW in the groundwater basin, providing up to **11,000 AF** of banked water that can be managed to help meet regional water needs. This 11,000 AF water bank can be used for water supply during drought years when Truckee River flows can be greatly reduced due to lack of snowpack. The banked water can be pumped and moved throughout TMWA's service area. Conservatively, 4 MGD or 4,400 AFA can be pumped in any given year to help meet customer demands during drought years.

2. Will the Project reduce, postpone, or eliminate the development of new or expanded non-recycled water supplies? Explain.

By providing 2,000 AFA of water to the North Valleys area the Project will postpone the development of other water resources. The Project is critical to an integrated regional water management strategy for the subarea within the greater Reno-Sparks metropolitan area.

The alternative water supply option for the North Valleys area is to send an additional 2,000 AFA of Truckee River water to the area. The American Flat Project will eliminate the need to build more infrastructure to divert additional Truckee River resources to the North Valleys area, which is outside of the Truckee River watershed. If additional Truckee River water is sent to the North Valleys area, for every acre foot required, an additional 0.61 AF would be required under TROA¹. This means that other water sources are preferred for the area to maximize the efficient use of limited resources. The Project will increase the efficient use of limited water resources for TMWA's entire service area and will specifically provide the North Valleys area with a net new water supply. In addition to optimizing the efficient use of Truckee River resources, there are many ancillary benefits of keeping water in the Truckee River watershed including maintaining river flows for downstream communities and supporting healthy ecological conditions in the river.

Other non-recycled water project alternatives besides Truckee River water that have been explored include several groundwater importation projects that would be costly and would face legal and public challenge. These projects include developing resources in northern Washoe County groundwater basins and pumping that water to the North Valleys area. The American Flat Project will eliminate or postpone the need to develop

¹Historically, the amount of Truckee River water that can serve the North Valleys area has been limited to approximately 3,000 acre feet annually (AFA), due to the fact that the effluent cannot be returned to the Truckee River. Currently the entire 3,000 AFA is committed. If Truckee River water beyond 3,000 AFA is sent to the North Valleys area, for every acre foot needed, it would require an additional 0.61 AF to be dedicated. These extra water rights are to make up for the non-consumptive use that cannot be returned to the Truckee River.

these resources, and it will also pave a path to use APW technology at other water reclamation facilities in the region and state.

3. Will the Project alleviate pressure on existing water suppliers and/or facilities? If so, please describe the existing water supplies, identify the supplies and/or facilities that will be impacted and explain how they will be impacted by the Project, including quantification where applicable.

The Project will reduce demand on other water sources, such as imported groundwater and Truckee River water, being used in the North Valleys area. The Project produces 2,000 AFA of drought-proof water supply, which serves as a substitute supply to TMWA's existing water resources for the North Valleys area. The American Flat Project helps stretch existing supplies in the North Valleys area and adds additional operational flexibility to TMWA for the remainder of its service area through the groundwater bank created. Up to 11,000 AF of banked water can be managed to help meet regional water needs during droughts.

Imported groundwater from Fish Springs Ranch is currently available to supply the North Valleys area. However, there is heightened competition for these supplies as the region develops due to residential and industrial development in other portions of TMWA's service area including Cold Springs, Spanish Springs Valley, and the central Truckee Meadows area. There is also heightened competition for the remaining available Truckee River water rights due to the influx of large industrial users outside of TMWA's service area at the Tahoe-Reno Industrial General Improvement District (TRIGID) downstream in Storey County.

Additionally, there is a groundwater depletion zone in the West Lemmon Valley hydrographic basin due to high density domestic well pumping, and TMWA has three existing production wells in this hydrographic basin. This Project could improve this drawdown zone through groundwater recharge. Injecting high quality APW into the aquifer will also help protect the water quality of TMWA's existing production wells in the hydrographic basin.

Environmental discharges of effluent to Swan Lake will be decreased by 2 MGD average annual flow when the American Flat Project is operational. This portion of the North Valleys area has had historic flooding issues, especially during the large storms in 2017. Decreasing effluent disposal to Swan Lake will help alleviate future flooding concerns and protect the community. Average daily flows at RSWRF are currently at 2.1 MGD and are projected to increase to 4 MGD beyond the year 2045.

4. What performance measures will be used to quantify actual benefits upon completion of the Project?

The following performance measures will be used to quantify the Project's benefits:

Groundwater monitoring to track water levels: Groundwater is currently extracted from the North Valleys area aquifer through a series of production wells and hundreds of domestic wells. A monitoring well network around the North Valleys area provides a historic snapshot of groundwater elevations that have declined over time. Production wells and several monitoring wells are equipped with pressure transducer loggers that provide continuously recorded water levels. Transducers in production wells are recorded continuously via supervisory control and data acquisition (SCADA). Transducers in monitoring wells are frequently downloaded, and the wells are manually sounded to check and calibrate the loggers. Manual water level measurements are recorded from wells that are not equipped with loggers on a bi-annual basis. TMWA will continue to collect groundwater elevation measurements at TMWA production wells, APW injection and extraction wells, and monitoring wells to validate that the Project is contributing to the recovery of groundwater elevations.

Groundwater monitoring to track the volume of water injected into the groundwater basin: To ensure permit compliance for the quantity of water injected, the volume of APW that is injected into the aquifer will be measured and reported to state permitting agencies. Current TMWA practices and monitoring techniques for existing ASR wells will be employed to future APW injection wells. Each well will be equipped with meters that record flow rates and cumulative volume of injected water, as well as water level sensors. Readings are continuously recorded. Annual reporting for ASR wells, which would be implemented for the Project, include monthly cumulative injection volumes and monthly minimum, maximum, and average flow rates. The volume of injected and extracted APW compared with groundwater elevations will allow TMWA to manage water levels such that they increase to sustainable levels.

Water demand by source will be tracked to show a reduced volume of imported groundwater, Truckee River water and production well pumping to meet water demands in the North Valleys: The volume of imported groundwater, surface water diversions from the Truckee River and pumping from production wells are recorded continuously by flow meters. Groundwater that is imported or pumped from local production wells is recorded and reported in a daily format to permitting agencies on a quarterly basis. Surface water diversions are recorded real-time and reported daily to the Federal Water Master. Demands in the North Valleys can be quantified using the flow meters that will show a reduced volume of other water sources once the Project is implemented.

The quantity and quality of water produced at the A+ treatment facility: The quantity of water produced by the APWF and injected into the aquifer will be monitored continuously by meters installed at the end of the APWF treatment train and on the two injection wells. The quality of water produced at the APWF will be extensively monitored for permit compliance, including primary and secondary drinking water constituents, unregulated constituents, and pathogens. Specific aspects of the water quality produced at the APWF is important to this Project because it must be compatible with the quality of the native groundwater and chemistry of the geologic formation. Important water quality parameters include pH, temperature, conductivity, oxidation reduction potential, dissolved oxygen, chloride, nitrate and total dissolved solids. Providing a compatible water source to the native groundwater and geologic formation minimizes the risk of mobilizing undesirable contaminants, such as arsenic.

The reduced amount of water discharged into Swan Lake: RSWRF effluent that is discharged to Swan Lake is currently monitored daily by a flow meter and is reported as a monthly cumulative volume. Once the Project is implemented, a flow meter will record the volume of flow that is diverted from RSWRF to the APWF. The APWF volumes can be compared to historic volumes of RSWRF effluent that was sent to Swan Lake to monitor the benefits of reducing flow to this closed basin playa that has experienced flooding in recent years.

New water rights commitments: Water produced from this Project will be a new resource that will provide significant value to the North Valleys. APW from RSWRF is considered a distinct and separate water resource than the water resources and water rights associated with the existing municipal water supply. Water supply for the area relies upon Fish Springs Ranch groundwater. Following Project commissioning and validation testing, recharged APW will be available for municipal water rights commitments by TMWA beginning as early as 2030. Water rights dedications of APW for municipal water service would occur until the 2,000 AF have been entirely dedicated. It is envisioned that a combination of APW and FSR water rights would be required for dedication. Based on this combination of water rights, it is estimated to take up to 30 years to dedicate the entire 2,000 AF of Project water rights.

Subcriterion No. 1b – Contributions to Water Supply Sustainability

1. Will the Project make water available to address a specific concern? Consider the number of acre-feet of water and/or the percentage of overall water supply to be made available by the Project. Explain the specific concern and its severity. Also explain the role of the Project by addressing that concern and the extent to which the Project will address it.

As detailed below, the American Flat Project is designed to address a range of concerns for the Truckee Meadows region and for the North Valleys.

Water Supply Shortages and Reliability

TMWA conjunctively manages its surface and groundwater resources, relying on Truckee River water when available and pumping its groundwater wells during high demand and drought periods, when surface water is limited or unavailable. The region has long recognized the need to further increase its off-river water resources because 80-85% of the region's water supply is sourced from the Truckee River. American Flat will diversify the region's water supply and reduce reliance on Truckee River resources. Due to the significant reliance on surface water, the region is impacted by hydrology and reduced snowpack. In the future, as droughts become more frequent or intense with climate change, it is crucial that the region have multiple backup drought supply sources. Storing Project water underground will provide an additional drought backup (groundwater bank) and will provide a consistent source of supply, even during the worst droughts.

The Project will be using a drought-resilient and reliable water supply by recycling municipal wastewater produced in the North Valleys area and treated at RSWRF. The ten-year average daily flow rate at RSWRF is approximately 1.7 MGD with future average daily flows projected as 4 MGD. The source wastewater for the Project is consistently available, and the 2,000 AFA will be a reliable local supply for the region.

Until the 2,000 AF is fully committed, the Project will act as a groundwater bank providing up to 11,000 AF of storage that can be used during drought periods when Truckee River flows decrease or are completely curtailed. The Project provides a drought-proof resource available even in the worst drought years and will enhance TMWA's water supply reliability. As the first indirect potable reuse project in Nevada, it will pave the way for future opportunities to use these treatment technologies and strategies at other water reclamation facilities in the region by educating the public, proving the technology, and demonstrating its effectiveness.

Groundwater Depletion

TMWA has 90 groundwater production wells and has an ASR program to recharge aquifers with treated surface water during months when demands are low and groundwater is not needed. Historically, TMWA has relied primarily on resting wells during the non-irrigation season to allow passive recharge to maintain aquifer levels. In the future, as water demands become greater and droughts are likely to increase in severity and/or duration, TMWA will need to rely more on its groundwater wells to supplement its surface water resources. This increased reliance will require additional pumping, and the Project would offset 2,000 AFA of that pumping, thereby allowing wells to rest and aquifers to recharge.

Due to the high density of domestic wells in the West Lemmon Valley basin, water levels have been steadily decreasing over the past 25 years. TMWA has several existing production wells in this basin. As seen in **Figure 5**, water levels have decreased by approximately 20-30 feet in some locations which impacts 438 domestic well owners in the area. The Project will inject APW into the West Lemmon Valley hydrographic basin which will help improve groundwater levels in two ways. It will allow TMWA to rest its production wells to allow for passive recharge and provide active recharge which will increase aquifer levels over time. By

stabilizing and increasing water levels, the Project helps provide long-term sustainability for those 438 domestic well owners.



Figure 5. Groundwater level drawdown in the West Lemmon Valley hydrographic basin

Water Quality Issues

PFAS chemicals have been identified in the West Lemmon Valley hydrographic basin near the Reno-Stead Airport at the Army National Guard (ARNG) Facility. The plume is moving away from the American Flat site but has the potential to move towards TWMA’s three existing production wells in the basin. The American Flat Project will inject high quality water that has the potential to help prevent the PFAS-contaminated water from impacting TWMA’s wells in the future. Additionally, the Project will treat for PFAS prior to injecting Project water into the groundwater basin. This is discussed in more detail in Criteria 2.

Natural Disasters that may Impact Water Supply Infrastructure

The region is susceptible to a range of natural disasters including drought, wildfires, flooding, and earthquakes. Due to this susceptibility, it is critical that the region has multiple layers of redundancy in its water supplies and infrastructure to continue to meet the community’s needs. The Project groundwater banking component further diversifies TWMA’s water resources portfolio.

Wildfire – The reservoirs that TMWA relies on for drought storage are in heavily forested areas. Many of these areas have been identified as having a high fire risk due to the overstocked forests and limited forest management practices over the last 100+ years. As seen in many communities throughout the West, a high-intensity wildfire could impact the natural infrastructure in the headwaters area by decreasing reservoir capacity due to sedimentation or degrading water quality in the river. If water quality in the river or reservoirs was impacted for an extended duration, TMWA would need to rely on alternative water sources including its production wells and groundwater banked in the American Flat Project.

Flooding – Climate change is expected to cause more extreme year-to-year variability in the region. While climate modeling still shows uncertainties, one possibility is that the region will receive more precipitation as the climate changes. This could result in increased flooding risks. Several of TMWA's existing production wells in the East Lemmon Valley hydrographic basin are located around Swan Lake, and several of these well sites were flooded in 2017. Many management actions have been taken since that flooding event to decrease the potential for Swan Lake flooding, and decreasing RSWRF effluent discharges to the lake as a result of Project implementation will further help reduce future flood concerns in the area.

Earthquakes – The Truckee Meadows is located on several major fault lines and is susceptible to earthquakes. TMWA's water supply infrastructure to its main water treatment plant, Chalk Bluff, was severally damaged during the 2007 earthquake. If critical infrastructure was impacted by an earthquake, TMWA relies on the redundancy of having multiple sources of supply. The Project will provide an additional source of supply that could be relied upon if needed during a natural disaster.

Heightened Competition for Water Supplies

The Truckee Meadows' population is steadily growing, and increased development is occurring throughout northern Nevada. TMWA relies on obtaining Truckee River water rights to supply new developments; however, competition for these water rights from other water users has been increasing. The Orr Ditch Decree established the number of water rights on the Truckee River at 224,000 AFA. No additional surface water rights can be created in the Truckee River system. As the region has developed, TMWA has relied on the conversion of existing agricultural water rights to municipal and industrial water rights; however, these water rights are limited with only approximately 30,000 AF of agricultural rights remaining in the system. There are many competing uses on the river, and there is competition for these limited remaining resources. There is also heightened competition due to the influx of large industrial users downstream and outside of TMWA's service area, especially at the TRIGID in Storey County. The RSWRF source water for the American Flat Project is currently being discharged into Swan Lake and evaporating. By treating the water for indirect potable reuse, TMWA will be maximizing the efficient use of an existing water resource, and there are no competing interests for this water supply.

Additionally, TMWA uses imported groundwater from Fish Springs Ranch for the North Valleys. However, competition for these resources has been and will continue to increase due to residential and industrial development in other portions of TMWA's service area including Cold Springs, Spanish Springs Valley, and the central Truckee Meadows area. The American Flat Project will provide a new water resource only available for use in TMWA's service area.

Availability of Alternative Supplies

While the Truckee Meadows has an adequate supply of resources in the near-term, it is critical TMWA diversifies its sources of supply to be adequately prepared for future droughts, climate change, and increased demand due to population growth. Alternative water supplies for this region include additional imported water from the Truckee River or from the development of importation projects in other groundwater basins. As

previously discussed, remaining Truckee River water rights are limited, and competition is increasing for those water rights. Using Truckee River water for the North Valleys area is inefficient from a water supply perspective due to the higher water rights requirements created by the return flow requirements. Specifically for every one acre foot of water needed, an additional 0.61 AF is needed to export the Truckee River water.

There are limited opportunities for new groundwater development in the East and West Lemmon Valley hydrographic basins because the committed water rights and domestic well allocations exceed the perennial yield of the basins as determined by the Nevada State Engineer. Additionally, groundwater importation projects from other basins have been investigated, but these projects are generally not viewed favorably by the public and are highly cost intensive.

The major benefit of this Project is that it is effectively a drought-proof local water supply for the region that would provide an additional reliable source of 2,000 AFA and provide a groundwater bank of up to 11,000 AF.

Increasing Cost of Water Supplies

TMWA's service area is reliant on groundwater and Truckee River water. The Truckee River has been adjudicated and is operated consistent with TROA by a federal watermaster. Truckee River supplies are finite and already allocated. As mentioned above, there are only approximately 30,000 AF of remaining agricultural rights that can be converted to municipal use. However, as Truckee River water rights convert from agricultural to municipal and industrial uses, there is increased competition to purchase those rights. The price of Truckee River water rights will increase in the future. Furthermore, groundwater supplies available in the service area require additional expensive treatment for arsenic and nitrate, thereby increasing the cost of groundwater in the future.

Truckee River water rights reached an all-time high of \$32,848/AF in the first half of 2006. Truckee River rights have stabilized and now remain around \$7,950/AF; however, as demand continues to increase and the amount of available water rights diminishes, Truckee River water right prices will increase in the future. Additionally, this is the cost to purchase the water rights and does not include other infrastructure costs to deliver the water.

-
- 2. Will the project help create additional flexibility to address drought? Will water made available by this Project continue to be available during periods of drought? To what extent is the water made available by this Project more drought resistant than alternative water supply options? Explain.**

Nevada is the driest state in the country, with the Reno-Tahoe International Airport receiving an average of only 7.4 inches of rain annually based on the period of record from 1981-2010. Due to its proximity to the Sierra Nevada, the climate in northern Nevada is marked by highly variable weather patterns with alternating periods of flooding and droughts. Water resources within the Truckee River watershed are primarily derived from snowpack and reservoir storage accumulated during the winter season.

Reno is the fastest warming city in the United States, and regional temperatures are expected to continue to warm as shown in **Figure 6**. Although the impacts on precipitation from climate change are uncertain, the region expects to incur more frequent or extended drought periods and a transition from river flows derived from melting snowpack to rainfall. The potential shift in precipitation patterns from snowfall to rainfall may have dramatic impacts on future water planning due to effects on water storage and quality.

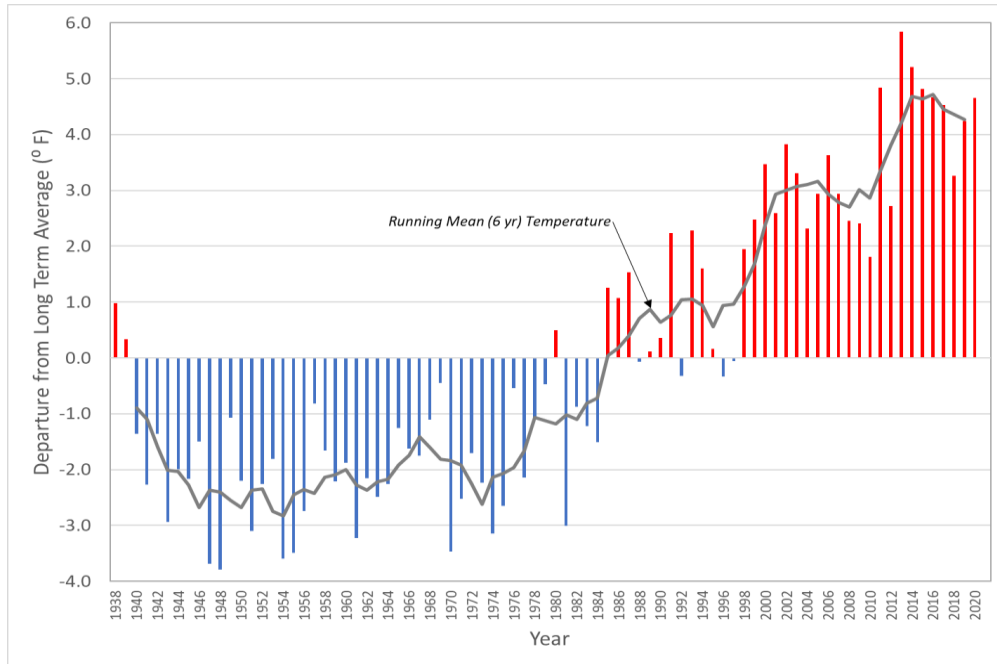


Figure 6. Mean temperature departure for the Reno-Tahoe Intl. Airport (Desert Research Institute, 2023)

The American Flat Project is an important component of diversifying the Truckee Meadows’ water resources portfolio to be more resilient to drought. Since the Project water is sourced from treated effluent, the water is effectively drought proof and will be available during drought periods. By adding Project water to TMWA’s water resources portfolio, it creates a new off-river resource that TMWA can rely on to meet customer demands even during the worst drought periods. For example, in the worst year of drought in 2015, TMWA needed to use 11,700 AF of drought supplies to meet customer demands. In a drought year, banked Project water can provide nearly 100 percent of the needed shortfall, while still providing 2,000 AF of water supply for growth.

3. Has the area served by the Project been identified by the United States Drought Monitor as experiencing severe, extreme, or exceptional drought at any time in the last four years?

The area served by the Project has experienced severe and extreme drought over the last four years as shown in **Figure 7**. The area was in a severe drought from December 2020 to the end of January 2021, moderate drought in February 2021, severe drought from March 2021 to mid-May 2021, extreme drought from mid-May 2021 to mid-October 2021, and severe drought from mid-October 2021 to early February 2023.

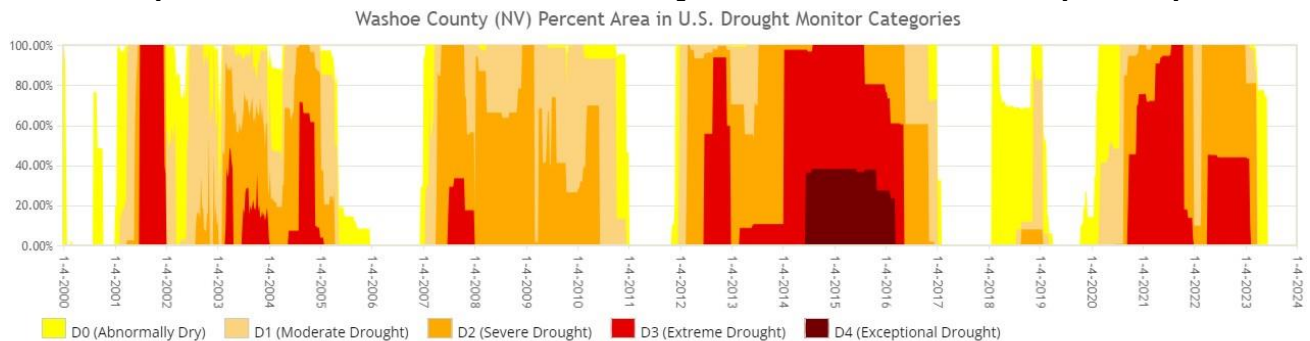


Figure 7. US Drought Monitor Status Showing Drought Conditions in Washoe County

4. Has the area served by the Project been designated as a drought disaster area by the State in the last four years?

The US Department of Agriculture (USDA) declared Washoe County, where the Project is located, as a primary natural disaster area for drought in the fall of 2020 and 2021.

Evaluation Criterion 2 – Environment and Water Quality

1. Will the Project improve the quality of surface water or groundwater? If so, how?***Groundwater Quality Benefits***

PFAS chemicals were recently found near the Reno-Stead Airport in an aquifer beneath the ARNG facility which is located approximately three miles south of the American Flat Site. Scientific studies have shown that exposure to PFAS in the environment may be linked to harmful health effects in humans and animals and as such the U.S. Environmental Protection Agency (EPA) has proposed a maximum contamination level (MCL) for six PFAS chemicals (EPA, 2023). The study at the ARNG facility found concentrations of two of these chemicals, perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS), above the proposed MCLs. For example, the maximum PFOS concentration in groundwater is 67 nanograms per liter (ng/L) which is nearly 17 times the proposed action level of 4 ng/L.

TMWA has a municipal supply well (Army) located 1,200 feet to the west of the elevated PFAS concentrations as shown in **Figure 8**. Based on TMWA's groundwater flow model, there is a high likelihood PFAS chemicals will migrate into this well (Pohll, 2019). Two scenarios were simulated including 1) historical pumping at three nearby TMWA municipal wells (Silver Knolls, Army, and Silver Lake) and no fluid injection or withdrawal at the American Flat site ("Without Project"), and 2) no pumping at the three TMWA municipal wells and full implementation of 2.0 MGD of injection and withdrawal of purified recycled water at the American Flat site to replace water that was previously pumped at the three municipal wells because of the potential for PFAS contamination ("With Project").

In the Without Project scenario, modeling results indicate that PFOS concentrations will exceed the proposed MCL of 4 ng/L after 35 years of historical pumping in the three municipal supply wells. The With Project scenario significantly reduces the migration of the PFAS chemicals off the ARNG site. Modeling results show that concentrations are below the MCL at the nearby Army well.

The Project will serve to mitigate PFAS contamination to TMWA's nearby municipal wells. This mitigation will protect TMWA's existing water sources to meet municipal demands.

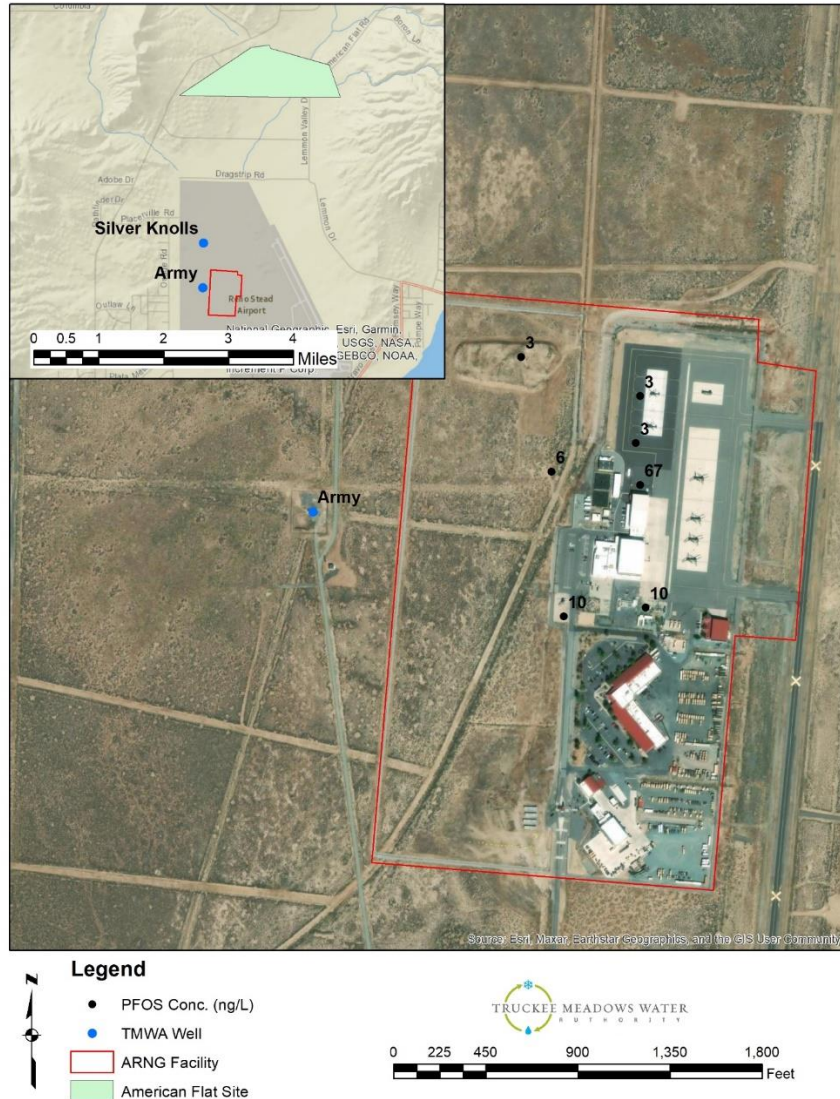


Figure 8. Location of the Army National Guard (ARNG) facility, measured PFOS concentrations in groundwater and nearby TMWA municipal supply wells

Surface Water Quality Benefits

Without the Project, the alternative water supply option requires 2,000 AFA of surface water to be exported from the Truckee River to the North Valleys. With the Project, the additional 2,000 AFA would stay in the Truckee River system where it would flow downstream to help maintain water quality and support the ecosystem. Downstream of the Truckee Meadows, the lower Truckee River is listed as impaired due to excessive phosphorus and turbidity levels. The primary impacts associated with excessive nutrients and turbidity in the Truckee River pertains to degradation of habitat for aquatic organisms. NDEP has established Total Maximum Daily Loads (TMDLs) for total nitrogen, total phosphorus, and total dissolved solids for the Truckee River.

Concern over quantity and quality of water supplies within the region also drives competition between downstream and upstream users that rely on the Truckee River to support sensitive ecologies, agricultural uses, industrial development, and diverse communities. Reducing demands on the Truckee River aligns with

improving the river’s critical habitat, which supports many fish species, including two endangered and threatened fish species—the threatened Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*) and the endangered Cui-ui (*Chasmistes cujus*)—that are culturally significant to the Pyramid Lake Paiute Tribe (PLPT).

This Project will also significantly reduce existing RSWRF effluent discharges by 2 MGD to Swan Lake, a closed basin playa that has experienced flooding in recent years, causing property damage and disruptions to area residents’ quality of life.

2. Will the Project improve effluent quality beyond levels necessary to meet State or Federal discharge requirements?

Yes, the Project will treat RSWRF effluent to Category A+ water, which is of greater quality than required by any state or federal discharge requirements. APW is category A+ reclaimed water quality, as defined by NAC 445A.27612, that meets the following water quality requirements:

- National Primary Drinking Water Regulations (NAC 445A.4525)
- Nevada Secondary Maximum Contaminant Levels (NAC 445A.455)
- Specific Reductions for Pathogens [NAC 445A.27612 and NAC 445A.27618(2)]
- Water Quality Monitoring Program for Unregulated Constituents (NAC 445A.27616)

The Project assures potable water quality by adhering to a stringent regulatory framework, as provided in NAC 445A, selecting industry-proven advanced water treatment unit processes and conducting pilot testing and field-scale demonstration studies with RSWRF source water.

APW pilot testing, site-specific demonstration studies, and hydrogeological evaluations validate achievement of the Program’s water quality goals through the selected advanced water treatment and ASR processes. APW-quality constituents of interest include bromate, total trihalomethanes, halo acetic acids, nitrate, pH (for groundwater chemistry), 1,4-dioxane, N-Nitrosodimethylamine, PFAS /perfluorooctanoic acid, and turbidity.

Potable water quality is achieved and maintained by implementing a comprehensive source water control program, selecting proven APW treatment unit processes, establishing treatment performance-critical control locations and water quality metrics, using continuous quality online sensors linked to SCADA, allowing for immediate process shutdown in the event of an out-of-specification water quality condition, conducting routine monitoring and testing, developing a comprehensive quality assurance and quality control plan, and using exceptionally trained professional operators.

3. Will the Project improve flow conditions in a natural stream channel? If so, how?

The Project will reduce the need to divert 2,000 AFA of water from the Truckee River to serve development in the North Valleys area. This would leave additional water in the Truckee River to benefit fish and wildlife. Concern over the quantity and quality of water supplies within the region continues to drive competition between downstream and upstream users that rely primarily on the Truckee River to support sensitive ecosystems, agricultural uses, industrial development, and diverse communities. The Project will provide a net new water supply to meet development needs in the North Valleys area, thus eliminating the need to move additional Truckee River resources to that portion of TMWA’s service area.

4. Will the project restore or enhance habitat for non-listed species? If so, how?

The Project will help ensure that 2,000 AFA of Truckee River water resources stay in the basin instead of being exported to the North Valleys area. The Truckee River provides important instream and riparian habitat for many aquatic and terrestrial species. Cottonwoods (*Populus fremontii*), sandbar willows (*Salix exigua*), and black willows (*Salix laevigata*) are key species in the riparian ecosystem of the Truckee River. New establishment of these species happens under higher flow conditions. Healthy stands of riparian cottonwoods and willows provides habitat for many species.

The Nature Conservancy has completed several major river restoration projects on over 11 miles of river downstream of the Truckee Meadows including the McCarran Ranch Preserve, Lockwood, 102 Ranch, and Mustang Ranch projects. This Project will keep 2,000 AFA of water in the Truckee River system to help benefit the aquatic and riparian habitat in these restoration areas.

Additionally, the Swan Lake Nature Study Area is a protected wetland habitat for local wildlife like Canadian geese, mallards, hawks and more. It is surrounded by sagebrush, greasewood, and other desert vegetation. The lake has a marshy habitat on the west side, and over 150 species have been recorded at the lake. The Swan Lake Nature Study Area is designated as a Nevada Important Bird Area. The Project will improve the water quality of the treated effluent entering this important bird habitat and guarantee minimum discharges remain in Swan Lake for habitat.

5. Will the Project provide water or habitat for federally listed threatened or endangered species? If so, how?

Yes, the Truckee River watershed is an endorheic basin ending at Pyramid Lake with no outlets. All excess water in the Truckee River system flows to Pyramid Lake and supports the fishery and ecological health of this desert terminal lake. The Project will reduce demands on the Truckee River. Decreasing the need to export Truckee River water outside of the basin will help improve the river’s critical habitat, which supports two fish species—the threatened Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*) and the endangered Cui-ui sucker (*Chasmistes cujus*). Not only are these fish species threatened and endangered, but they are also of immense cultural importance to the PLPT.

Evaluation Criterion 3 – Economic Benefits

Subcriterion No 3a – Cost Effectiveness

1. Reclamation will calculate the cost per acre-foot of water produced by the Project using information provided by Project sponsors. Please provide the following information for this calculation:

Construction costs by year, including all costs following planning and design, are presented in **Table 3**. Construction is anticipated to start in 2025 and be completed in 2027.

Table 3. Estimated Construction Costs by Calendar Year

2022	2023	2024	2025	2026	2027	TOTAL
						\$183,790,012

b. The total estimated or actual costs to plan and design the Project. Note: This should not include the cost to complete a feasibility study that meets the requirements of Reclamation’s Directives and Standards WTR-11-01.

Planning and design costs by year are presented in **Table 4**.

Table 4. Estimated Planning and Design Costs by Calendar Year

YEAR	DESIGN	LANDS	MANAGEMENT	PERMITTING	PLANNING	TOTAL
2022			\$95,257		\$529,761	\$625,018
2023	\$1,980,381		\$155,257		\$147,270	\$2,282,908
2024	\$3,659,519	\$31,985	\$155,257	\$159,923	\$400,000	\$4,406,684
2025	\$3,544,569	\$131,985	\$4,754,169	\$234,923	\$375,000	\$9,040,646
2026			\$4,694,169	\$50,000		\$4,744,169
2027			\$4,455,575	\$25,000		\$4,480,575
Total	\$9,184,469	\$163,970	\$14,309,684	\$469,846	\$1,452,031	\$25,580,000

c. The estimated expected average annual operation and maintenance costs for the life of the Project. Please do not include periodic replacement costs in the operation and maintenance costs. Periodic replacement costs should be provided separately in response to (f) below. Note: this is an annual cost—not total cost.

American Flat’s annual operation costs are **\$2,750,000** annually as shown in **Table 5**. Operating & maintenance (O&M) cost estimates include maintenance and power for the facilities as well as the cost of staffing the facilities.

Table 5. Annual Operations and Maintenance Costs

CATEGORY	ANNUAL COSTS
Labor	\$550,000
Energy	\$825,000
Consumables	\$962,000
Maintenance	\$412,500
Total	\$2,750,000

d. The year the Project is expected to begin to deliver reclaimed water.

The American Flat Project will begin to deliver reclaimed water in **2027**.

e. The projected life (in years) that the Project is expected to last. Note: this should be measured from the time the Projects starts delivering water.

The facilities associated with the American Flat Project have a projected life of **50 years** (2028-2077).

f. All estimated replacement costs by year. If there are multiple replacement costs in (1) one year, or at the same interval, please total them and put them on the line with the year or interval.

Five replacement needs have been identified throughout the project life cycle in **Table 6**.

- A. UV ballast replacement cost estimated at \$20,000 every 5 years.
- B. UV sensor replacement cost estimated at \$10,000 every 10 years.
- C. Tank recoating cost estimated at \$350,000 every 25 years.
- D. Equipment replacement cost estimated at \$750,000 every 25 years.
- E. Biological activated carbon filtration (BACF) media replacement cost estimated at \$350,000 every 25 years.

Table 6. Expected Replacement Costs

YEAR	A	B	C	D	E	TOTAL
2033	\$20,000	-				\$20,000
2038	\$20,000	-			\$10,000	\$30,000
2043	\$20,000	-				\$20,000
2048	\$20,000	-			\$10,000	\$30,000
2053	\$20,000	\$350,000	\$350,000	\$750,000	-	\$1,470,000
2058	\$20,000	-			\$10,000	\$30,000
2063	\$20,000	-				\$20,000
2068	\$20,000	-			\$10,000	\$30,000
2073	\$20,000	-				\$20,000
TOTAL	\$200,000	\$350,000	\$750,000	\$350,000	\$50,000	\$1,670,000

- g. The maximum volume of water (in acre-feet) that will be produced annually upon completion of the Project. This volume of water must correspond to the costs provided above. If costs are only provided for a portion or a phase of the project, then only the water produced by that portion or phase of the project will be considered under this criterion.

The Project will produce **2,000 AFA** and 100,000 AF over the life of the Project. Up to 11,000 AF of groundwater can be banked. During drought periods up to 4,000 AFA of groundwater can be extracted.

- 2. Reclamation will calculate the cost per acre-foot for the Title XVI Project using the information requested in Question No. 1 and compare it to the non-reclaimed water alternative, and any other water supply options that the applicant identifies to evaluate the cost effectiveness of the Project. Please provide the following information for this comparison:

- a. A description of the conditions that exist in the area and projections of the future with, and without, the Project.

Existing and Projected Future Conditions with the Project

The Truckee Meadows Regional Plan projects significant land use development and population growth in the North Valleys area. Development in the North Valleys is dependent on diverse and sustainable water supplies, permitted wastewater treatment capacity, and effective flood and stormwater management strategies.

The existing North Valleys area is characterized by residential and commercial growth with full reliance on imported water and is constrained by wastewater treatment and effluent management capabilities, including strict management of environmental effluent discharges to Swan Lake that will not exacerbate flooding.

Current water supply strategy for planned development of the North Valleys area relies upon Fish Springs Ranch water rights. Currently, no other groundwater or surface water supplies are available to the North Valleys area without building additional infrastructure. Truckee River water use in the North Valleys is limited by existing infrastructure, to pump and move Truckee River water to the area, and water rights return flow requirements under TROA. RSWRF does not return treated effluent to the Truckee River and as such, TROA limits the amount of Truckee River water to the area to 3,000 AF, without having to purchase additional water to make up the return flow. This return flow requirement requires the dedication of an additional 0.61 AF for every one AF of demand.

Although Fish Springs Ranch water remains available for development in the North Valleys area today, competition for Fish Springs Ranch water rights is increasing due to growing economic development in neighboring communities including Cold Springs, Spanish Springs Valley, the Central Truckee Meadows, and the Tahoe Reno Industrial Center, which houses the Tesla Giga-Factory and other industrial users such as Apple, Google and Switch. These potential uses decrease Fish Springs Ranch water rights available for growth in the North Valleys.

The Project will provide three distinct benefits to improve future conditions for the North Valleys area:

1. It will create a new 2,000 AF water supply for the area, offsetting a portion of the Fish Springs Ranch water rights that will likely be utilized for population growth and economic development in competing areas. The value of water rights for municipal uses in the North Valleys area is substantial, currently \$43,575/AF. Following Project commissioning and meeting permitting monitoring requirements, recharged APW will be available for water rights dedications by TMWA beginning as early as 2030. Water rights dedications of Project water for water service would occur until the 2,000 AF have been entirely dedicated. It is envisioned that a combination of APW and Fish Springs Ranch water rights would be required for dedication. Based on this combination of water rights, it is estimated to take up to 30 years to dedicate the entire 2,000 AF of Project water rights. The net new water supply will support the development of up to 4,750 new homes in the North Valleys. As discussed below, during the time until water becomes committed, the water will be used to create a groundwater bank.
2. The Project will create a new climate change and drought resilient 11,000 AF underground groundwater bank that will help meet summertime peak demands during drought periods, increase drought reliability and water system resiliency, and reduce reliance on the Truckee River for the entire TMWA service area. By recharging 2 MGD of APW into the aquifer at American Flat, the Project will create a 11,000 AF bank of reserve water available for multiple beneficial uses. This groundwater bank is drought resistant because the effluent source is never curtailed and the groundwater bank will not be subject to any potential future curtailment because it is a credit-based system. Off-river storage of surface water from the Truckee River has been investigated for years, and there are limited sites available that can feasibly yield this capacity. This site has been thoroughly investigated and is able to accept up to 11,000 AF.
3. Wastewater effluent management capacity is limiting the North Valleys area's residential and commercial development, which in turn limits economic growth because NDEP established the permitted wastewater treatment capacity of RSWRF at 2.5 MGD until a new effluent management strategy is developed and permitted.

The Project increases RSWRF effluent management capacity by 2 MGD, which enables NDEP to increase RSWRF wastewater treatment capacity by 2 MGD, thereby supporting approximately 12,100 new residential and commercial wastewater connections within the North Valleys area. In addition, with the Project implemented, the future condition includes attracting commercial and light industrial uses to the North Valleys.

Future Conditions without the Project

Without the American Flat Project, the status quo (no new growth) would be maintained until TMWA implemented a supplemental water supply project and the City of Reno implemented an expanded non-potable water recycling alternative. Implementation of these alternatives would likely be accelerated, and the 2 MGD effluent management solution would be required first. An expanded recycled water storage and conveyance project of a similar scope to the Project, would require 5 to 10 years to plan, engineer, construct, permit, and commission. The supplemental water supply alternative would be implemented in a timeframe to

alleviate the risk of running out of Fish Springs Ranch water resources. The Project solves two problems, *with less infrastructure and reduced costs*, than implementing two separate projects.

If the Project is not implemented and indirect potable reuse is not proven up as a viable future water resource, other water supply alternatives, such as importation, must be considered for the future. If the indirect potable reuse project is not implemented, the advancement to direct potable reuse may not be possible.

Until the Project is implemented, or Reno implements a new effluent management strategy, constrained economic development will persist in the North Valleys area, including:

- Dramatically reduced residential and commercial growth opportunities.
- Continued reliance solely on imported Fish Springs Ranch water, recognizing increasing competition for available Fish Springs Ranch water rights.
- Continued effluent environmental discharges to Swan Lake that potentially exacerbate flooding.

Truckee Meadows regional water planners, agencies, and public officials have been developing the Project since 2014. Significant investments in technical studies and public outreach have been spent on the American Flat Project. Delaying or canceling the American Flat Project would be costly for Reno and TMWA and delay positive economic development within the North Valleys area.

b. Provide the cost per acre-foot of other water supply alternatives that could be implemented by the non-Federal Project sponsor in lieu of the Project. This must include, but is not limited to, one water supply alternative that would satisfy the same demand as the Project. Other water supply alternatives beyond one non-reclaimed water alternative are not required but may be provided where available to demonstrate the cost effectiveness of the Project.

Reclamation’s recommended approach for determining the equivalent uniform annual cost (EUAC) is used to estimate TMWA’s expected annual cost of water. This estimated annual cost is based on the net present value (NPV) of construction and future operation, maintenance, and repair (OM&R) expenses over the 50-year annualization period. No future capital financing cost is included. Assuming the total capital cost of \$209,370,000 and annual OM&R costs of \$2,750,000 with 2.5 percent discount rate for the NPV calculation, and 50-year annualization period, the unit economic cost of water is estimated to have an EUAC of \$4,757/AF.

Alternative Project Cost Comparison

Imported Water Alternative (Non-Reclaimed Water Alternative)

A non-reclaimed water alternative was developed that provided equivalent benefits to the Project. It is important to note that the non-reclaimed water alternative must include three components to yield comparable benefits as the Project: (1) a 2,000 AF potable water supply from TMWA’s existing water system serving the Truckee Meadows; (2) 2 MGD of additional effluent management to be provided by expanding non-potable water recycling within the North Valleys area and sites in northwest Reno; and (3) a groundwater banking and/or water storage component.

An alternative to the Project for the 2,000 AF water supply project would consist of 26,000 feet of 20-inch transmission main, a new high pressure booster pump station, 10,000 feet of 20-inch distribution main, a second booster pump station, storage, a 20-inch distribution main to the ASR site and two recharge/recovery wells located at the American Flat ASR site. The water rights associated with this project would require the purchase of an additional 0.61 AF of water rights per AF due to return flow requirements in place under TROA. The water alternative supply project would rely on acquiring necessary Truckee River water rights (approximately 3,200 AF), plus capacity in existing water treatment and related infrastructure, including

associated impact fees and OM&R costs. **Table 7** summarizes the major project components and the associated cost/fees.

Table 7. 2,000 AF Alternative Water Supply Project Costs

COMPONENT	COST
Transmission Main 26,000 ft., 20 in.	\$13.0 M
High Pressure Pump Station	\$6.0 M
Distribution Main 10,000 ft., 20-in.	\$5.0 M
Distribution Pump Station	\$3.0 M
Distribution Storage	\$5.0 M
ASR Main 25,000 ft., 20-in.	\$12.5 M
ASR Wells (2)	\$5.0 M
Water Rights/Fees (\$4,240 per 6,000 SF parcel)	\$30.3 M
Treatment/Distribution Fees	\$45.4 M
Total Project Cost	\$125.2 M

The annual OM&R costs for the Imported Water Supply are estimated to average approximately \$1,231,000 per year with a discounted \$1,129,000 per year NPV.

Alternative Effluent Management Project

Imported Water Alternative with Required Effluent Management

An additional direct and central Project benefit that is integral to its origin, purpose, and need is its handling of post-treatment effluent from the City of Reno’s water reclamation facility. The 2 MGD of additional effluent management would be provided by the Expanded Non-Potable Water Recycling project alternative as presented in the APW Program, American Flat Feasibility Study, Winter 2022, Section 5.2.1. Costs for the required infrastructure have been escalated into 2023 dollars, as shown in **Table 8**.

Table 8. Two (2) MGD Alternative Effluent Management Project (Expanded Non-Potable Water Recycling)

COMPONENT	COST ¹
Red Rock Reservoir	\$70.8 M
RSWRF to Red Rock Reservoir Transmission Pipelines	\$55.8 M
RSWRF to Red Rock Reservoir Pump Station	\$11.4 M
RSWRF Additional Effluent Treatment	\$7.7 M
RSWRF to Northwest Reno Transmission Pipeline	\$41.2 M
RSWRF to Northwest Reno Pump Station	\$5.1 M
Recycled Water Storage Tank	\$3.6 M
Northwest Reno Recycled Water Distribution System Pipelines	\$41.0 M
Total Project Cost	\$236.6 M

¹ Assumes 5% escalation rate from 11/2023 estimate to construction timeline in 11/2025

Based on the current operations for a similar facility in the region, the annual OM&R costs for the Alternative Effluent Management Project are estimated to be \$2,200,000 per year with a discounted \$2,016,000 NPV. This is likely a conservative estimate given that it corresponding to less than 1% of the facilities' total construction cost.

As described above, the American Flat Project provides two major water system benefits for the region, an effluent management benefit and a water supply benefit. Without the Project, both projects would be implemented over time. As a result, the combined cost of both the Imported Water Alternative and Alternative Effluent Management Project should be considered to fairly evaluate the Project's full benefits and true cost-effectiveness for the region's water/wastewater system. In total, the estimated capital cost of the alternative non-recycled water supply option equivalent to the Project is \$361.8 million. This compares to the estimated capital cost of the American Flat Project of \$209 million. The American Flat Project is \$152.4 million less, or 57.9% of the cost of the alternative projects that would otherwise be required to achieve the same benefits.

Table 9. Net Present Value of Life-Cycle Costs (50-year)

COMPONENT	IMPORTED WATER ALTERNATIVE	AMERICAN FLAT PROJECT
Total Capital Costs	\$117,418,000	\$196,356,300
Annualized Capital Cost ¹	\$4,128,400	\$6,903,900
Annual OM&R Cost ¹	\$1,127,900	\$2,519,600
Total Annual Cost¹	\$5,256,300	\$9,423,500
Water Supply (AF)	2,000	2,000
Unit Cost per AF¹ - Water Supply Only	\$2,628	\$4,712
Unit Cost per AF¹ - Effluent Mgmt. Only	\$4,909	
Unit Cost per AF¹ Full System Cost	\$7,537	\$4,712

¹ The annualized net present costs are shown as Equivalent Uniform Annual Costs (EUAC) with annual values between 2023 and 2072.

Life-cycle costs in **Table 8** are calculated over a 50-year period of analysis using a 2.5% real discounted rate in accordance with current Reclamation guidance for water resource planning. Each alternative's projected future annual expenditures (i.e., capital and OM&R costs) were combined and discounted back to their present (2023) value so that the project's future costs are converted to its NPV. The annual cost values shown in **Table 9** are calculated by applying a 50-year annuity factor of 28.36 to calculate the corresponding equivalent uniform annual cost (EUAC) of supplied water.

- c. If available, provide the cost per acre foot of one water supply project with similar characteristics to the Project. This information does not have to be provided if it is not available. It is intended to provide another possible comparison to demonstrate the cost effectiveness of the Project.

Capital costs for the Pure Water Soquel Project in California are \$169 million (in 2022 dollars) and annual O&M costs have been estimated at \$2.98 million. The project will initially produce up to 1,500 AFA of APW. The combined net present value of 50 years of O&M costs and the capital costs is estimated to \$262 million (in 2023 dollars). The corresponding unit equivalent uniform annual cost (EUAC) for the Soquel Project is estimated to be approximately **\$6,088 per AF** (in 2023 dollars). Planned future expansion of the Soquel

project in 2034 is anticipated to increase its service capacity to 3,450 AF per year which reportedly is expected to subsequently lower its unit cost of water to between \$2,375 to \$3,000 / AF (in 2023 dollar).

d. Discussion of the degree to which the Project is cost-effective. Where applicable, include a discussion of why the Project may be cost effective even if the overall Project cost appears to be high.

Among feasible alternatives, this Project is most cost effective to both ensure a drought-proof, sustainable water supply for TMWA customers and an effluent management solution that improves the economic development potential in the region and decreases flooding concerns. Although the Project’s \$209 million capital cost is substantial, as shown in **Table 9** the Project is cost effective compared to the next most viable alternative in terms of capital cost and annualized cost of the produced water. To obtain the same benefits for the region, the Imported Water Alternative and Alternative Effluent Management Project cost nearly 60% more per AF than the American Flat Project. The benefits to TMWA and the region are much greater than the Project costs, as documented in Subcriterion 3b. Project benefits have been calculated at approximately \$590 million for the region. Additionally, this Project is the first indirect potable reuse in northern Nevada and paves the way for future similar projects in the region to create more resilient, drought-proof water supplies to address climate change and population growth.

Subcriterion No 3b – Economic Analysis and Project Benefits

1. Summarize the economic analysis performed for the Project, including information on the Project’s estimated benefits and costs. Describe the methodologies used for the analysis that has been conducted. Points will be awarded based on a comparison of the benefits and costs of the Project. The information provided should include:

a. Quantified and monetized Project costs, including expected capital costs and operations and maintenance costs.

The total capital cost for the Project is estimated to be \$209.4 million in 2023 dollars with a 2023 NPV of \$196.4 million based on a 2.5% discount rate. The Project’s future OM&R costs are estimated to average \$2.78 million per year when it begins operations in 2028. The NPV of 50 years of O&M is \$71.5 million. As a result, combining both capital and O&M costs, the total cost of the project has a NPV of \$267.8 million.

All Project facilities are expected to have a service life of at least 50 years with proper maintenance; costs incurred after 50 years would be significantly discounted and were not considered in this analysis. The alternative’s costs (i.e., capital and O&M) were combined and brought back to their present value so that the Project costs could be represented by a single number, the NPV. The total annual cost was developed by including the annualized capital costs and annual O&M costs. The annual costs were then divided by the per year water benefits to obtain the cost per AF.

b. Quantified and monetized Project benefits. This includes benefits that can be quantified and expressed as a monetized benefit per acre-foot.

Water Supply Benefit

The Project will add 2,000 AF of net new local water supplies to TMWA’s current water system and thereby will avoid future diversion and use of imported water supplies to meet its water supply and groundwater recharge needs. The benefit of this new supplemental water supply will be most impactful and valuable in helping TMWA better meet potable demands during drought years.

The most appropriate approach for estimating the Project’s water supply benefit is based on the cost of TMWA’s least-cost supply alternative project that would provide the same water supply. Increased imported Truckee River water to North Valleys for water supply and to the American Flat site for groundwater

recharge/recovery has been identified as the most viable non-recycled water project alternative. As shown in **Table 9**, the total NPV of the imported water supply alternative is estimated to be \$149.1 million.

Value of Water Rights

The Project also provides a significant additional economic advantage compared to the alternative. The value of groundwater rights for potable uses in the North Valleys area is \$45,754 per AF. The Project produces 2,000 AF of potable water. Following commissioning, injected water will be available for potable water rights dedications by TMWA beginning in 2030. Water rights dedications for potable water service would occur until the 2,000 AF have been entirely dedicated, which is estimated to occur gradually and would be completed by 2060. Over that 30-year period the 2,000 AF will generate roughly \$83.8 million dollars (NPV) in water rights dedications. Furthermore, in the interim the Project will also allow TMWA to bank category A+ water in the aquifer for drought supply until the water rights are committed.

Avoided Cost Savings for Regional Effluent Management

A major benefit of the Project results from its diversion and treatment of effluent that would otherwise need to be stored, treated, and distributed. Due to capacity issues, under the Without Project conditions or other Project Alternatives, development of the Alternative Effluent Management Project would be necessary. This project includes the construction of the new Red Rock Reservoir and extensive transmission pipeline system at an estimated total construction cost of \$236.6 million. In addition, future OM&R cost for the facilities' operations are estimated to be \$2.2 million per year. Over the 50-year period of annualization, the NPV of the facilities' lifecycle costs is estimated to total \$278.5 million.

The Project would eliminate the need for these new facilities and consequently result in a major economic benefit to the region in terms of future cost savings. The value and importance of the Project for the City of Reno is demonstrated by its partnership in the Project's development and funding commitment to the Project's construction cost and future OM&R costs.

Groundwater Storage and Drought Supply

In addition to providing a more reliable supply during years of low precipitation, the Project will create a 11,000 AF groundwater bank of APW. Based on the planned infrastructure, 4,000 AF during drought could be withdrawn and used to meet needs throughout TMWA's Service Area, not just in the North Valleys. The economic benefit value of water shortage is difficult to estimate. Similarly, the economic cost of drought supply shortage (or replacement supplies) is also difficult to estimate especially as water prices do not represent the full value (i.e. consumer and producer surpluses) that users will obtain from their water use. Nonetheless, the unit values for water reliability can be expected to be a reasonable and conservative representation of water scarcity values that can be applied to the project's increased water supplies during drought periods.

During a drought event, the Project would provide 2,000 AF in water supply from both its annual production and 4,000 AF that can be obtained from its enhanced groundwater storage. As a result, using the \$642/AF water reliability value as a conservative value for the unit drought supply benefit for water users, the total drought supply benefit from the project during a drought event is estimated to be approximately \$2.57 million. This increase in drought year supply can be expected to be available for 5.5 years of consecutive drought conditions before the reserves would be exhausted. Based on the region's water supply conditions since 1985 there have been 24 drought years – equivalent to a 63.2 percent incidence rate. Applying this factor, the average annual groundwater storage and drought supply benefit from the project is estimated to be \$1.62 million. Over the 50-year period of analysis, the NPV of this benefit will be \$41.7 million.

It should be noted that there is potential overlap and risk of double-counting between benefits obtained by water users from improved water reliability which should reduce the risk and extent of water shortages. To account for this, the benefit-cost analysis for the Project does not attribute any water reliability benefits in its evaluation of the project's economic performance and cost-effectiveness.

Water Reliability

The perceived monetary loss to residents and economic effects from reduced residential deliveries and water shortages can be estimated using a linear demand function method with retailer-specific domestic water rates. Studies for the southern California region, which are comparable to the northern Nevada region, have estimated the marginal benefit value of water for users. These estimates are based on standard methods using available data for median incomes, utility water rates, and published estimates of demand elasticity. The current unit value of economic losses for Los Angeles water agency and users are estimated to vary between \$500 to \$4,270/AF in 2023 dollars based on anticipated price and demand increases, by 2038 these water valuations are expected to range from \$1,300 to \$9,437/AF (Porse et al., 2018). This water supply reliability benefit represents the additional benefit to water users above and beyond their existing water cost. As such it represents the incremental marginal value of water supplied during periods of water scarcity and shortages.

The water demand, use and supply conditions for the northern Nevada region are considered generally comparable to those in Los Angeles. As a result, the above water reliability benefit finding might reasonably be expected to be similarly applicable to TWMA's water users and the northern Nevada region. For this analysis, a conservative benefit value of \$642/AF (reduced based on current water rate differentials between the two locations) is used to represent the water reliability benefit. This value is a fraction of TMWA's estimated unit cost for increased imported water supplies which it should be noted will be vulnerable to supply shortages during drought years. Nonetheless, it is used as a conservative benefit value at the low end of the range estimated for current cost of economic losses for region's water users.

As a result, the water reliability benefit from the project 2,000 AF increase in water supply may be estimated to be \$1.28 million annually. Over the 50-year period of analysis, the NPV of this benefit would be \$33.0 million.

Job Creation During and Post Construction

Construction: A job creation analysis was performed using RIMS II input-output modeling to estimate the Project future income and employment benefits on both a total and regional basis. The analysis which found that future Project construction spending will result in approximately \$151.6 million in total earning (by direct, indirect and induced employment) by the 1,738 jobs (full-time equivalents) support by its activities. Direct employment by the Project would result in 1,032 of these jobs which would represent an average of 344 jobs annually over the Project's three years of construction. The extent to which these benefits accrue to the Reno region economy will depend on its capacity to support the project's workforce, equipment and material needs. Based on potential high/low leakage assumptions by cost category, the expected range of regional earnings benefits are expected to range from \$75.8 million to \$125 million. The Project's employment benefits are similarly expected to range from 696 to 1,448 total jobs over the three years of construction.

While the economic benefits from Project construction are substantial, they may largely represent a transfer in economic benefits resulting from the use of the region's capital resources for the Project. Construction of the Imported Water Alternative or even other non-water infrastructure projects would also result in increased income benefits. As a result, the Project construction benefits to the region's economy will not be specific or

unique to the project. To account for this, the benefit-cost analysis for the Project does not attribute any project construction benefits in its evaluation of the Project’s economic performance and cost-effectiveness.

Post-Construction: Post construction, ongoing operation and maintenance activities will have a positive and long-term impact on the regional economy. In total, future ongoing operation and maintenance activities will create up to 10 total jobs with a labor income of \$762,000 in labor income annually that would predominantly benefit the region’s economy. Note that the economic benefits from the project’s future operations are more specific and will differ from those that would result from other infrastructure developments that might occur in-lieu of the Project. As a result, it is considered reasonable to attribute the Project’s operations employment benefits its economic performance although strictly spending it is its net earnings benefits that might better represent the economic benefit to the region’s economy.

c. A comparison of the Projects quantified and monetized benefits and costs.

The monetized Project benefits in annualized value and NPV are summarized in **Table 10**. The total cost for the Project is also provided with the estimated net benefits that the Project is expected to generate over its 50-year period of operations. The benefit cost ratio for the project which is estimated to be 2.19 which indicates that the Project will be a highly cost-effective investment for the Region.

Table 10. Benefit Summary and Cost Comparison

BENEFIT	ANNUALIZED UNIT VALUE	NET PRESENT VALUE (NPV)
Water Supply Value of supplied water based on the cost of the Imported Water Supply Alternative	\$2,628/AF	\$149,081,200
New Water Rights Estimated monetary value of water rights for reclaimed water supplies created by Project use of effluent water	\$1,478/AF	\$83,812,000
Regional Effluent Management Cost Savings Savings for City of Reno from avoided construction and operation of Alternative Effluent Management Project to otherwise manage water reclaimed by Project	\$4,909/AF	\$278,447,600
Groundwater Storage / Avoided Water Shortage Value of 11,000 AF in increased groundwater reserves and avoided increased supply cost and/or lost water use value during drought periods.	\$642/AF	\$41,674,300 (a)
Water Supply Reliability Economic welfare value to water users (consumer or producer surpluses) of improved supply dependability/decreased risk of future shortages	\$642/AF	[\$32,992,200 (b)]
Job Creation During Construction Total labor earnings (direct, indirect and induced) generated by Project construction activity	\$151,600,000 (3-yr construction period)	[\$77,906,800 (c)]
Jobs Sustained Post-Construction O&M labor income (direct, indirect and induced) generated	\$762,000/yr	\$19,579,500

BENEFIT	ANNUALIZED UNIT VALUE	NET PRESENT VALUE (NPV)
Total Benefits		\$586,007,700
Construction Cost		\$196,356,300
OM&R Cost		\$71,462,200
Total Cost		\$267,818,500
<i>Benefit Cost Ratio = 2.19</i>		
Net Benefits		\$318,734,200

Notes:

- (a) Benefit value adjusted to account for an annual 63.2 percent drought frequency and 4,000 AF of supply availability.
- (b) Benefit not attributed due to potential for double-counting with groundwater storage/avoided water shortage benefits.
- (c) Construction earnings not attributed as it can represent a transferred economic benefit rather than net gain for Nevada.

-
2. Some Project benefits may be difficult to quantify and/or monetize. Describe any economic benefits of the Project that are difficult to quantify and/or monetize. Provide a qualitative discussion of the economic impact of these benefits. Points will be awarded based on the potential economic impact of the Project-related benefits. Some examples of benefits may include, but are not limited to, acres of land or stream miles that may be benefitted or not harmed, benefits to habitat or species, flood risk mitigation, local impacts on residents and/or businesses, job creation, and regional impacts. This may include benefits listed in question one, if they have not been monetized (e.g., water reliability, water quality, and recreation.)

Regional Economic Growth and Development

The Project will provide new drought-proof water supplies that can support future development, including approximately 4,750 new homes in the region. It will create increased effluent disposal capacity at the region’s existing wastewater system that will support approximately 12,100 new service connections. Based on a current median home value in Washoe County of \$525,000, the total value of the future residential development supported by the project’s water supply expansion is approximately \$2,500 million. The total value of the future residential development supported by the Project’s wastewater supply expansion is \$6,352.5 million. The portion of this economic development that might reasonably be attributed to the Project will depend in part on the extent that water and wastewater service is a critical limiting factor for growth in the region. Although the Project’s contribution to that economic development is difficult to quantify, the future tax revenue of that growth can be expected to be \$67 million per year for the water supply system and \$162 million per year for the wastewater capacity increase. Although the *net* economic benefit to the region will depend on the offsetting cost of County provided public services, the Project will enable and accommodate continued future residential and related business growth within the region that otherwise might not be feasible.

Environmental and Fishery Benefits

Two federally listed fish species are protected within the Truckee River watershed (Lahontan cutthroat trout (threatened) and Cui-ui (endangered). Spawning for both species occurs within the lower Truckee River during its lowest average flows periods. As a result, the Imported Water Alternative’s diversion from the Truckee River could have adverse effects on their populations from reduced river flows and related aquatic conditions and habitat availability. The future severity of this adverse effect can be expected to worsen as more prolonged droughts, highly variable annual precipitation, and greater water scarcity from future climate change will likely worsen the situation for listed fish species within the lower Truckee River system.

Current in-stream flow requirements are in place to ensure spawning habitat access and species viability. The 1992 Cui-ui recovery plan specifies water requirements and delisting criteria for Cui-ui and recommends average annual Truckee River inflow to Pyramid Lake of 65,000 AF. The 2,000 AF annual diversion under the Imported Water Alternative could correspondingly reduce water inflows to Pyramid Lake.

As a result, retention of water within the watershed is considered vital for these species' continued survival and even a comparatively limited reduction of instream flows could negatively impact fish species and impede progress towards de-or-downlisting their current threatened and endangered species statuses. However, due to complexity of the ecosystem-fishery interrelationships and future climate and environmental uncertainty, the future impacts on the Truckee River watershed's fishery and environmental resources cannot be quantified.

Recreation Benefits

According to the Nevada Department of Wildlife, the lower Truckee River is one of the most heavily fished waters in Nevada and supports between 60,000 to 100,000 angler days per year. Pyramid Lake is also major fishing destination in northern Nevada. Together these fisheries support a multi-million dollar industry which contributes directly and indirectly to region's economy. A 2010 study estimated annual expected welfare losses of approximately \$31 million (equivalent to \$42.4 million in 2023 dollars) (Davis and Moeltner, 2010).

Late summer into mid-fall is the primary time when fishing tourism spikes as that is the best time to fish the waterway, it is also the time when environmental stress on fish is the highest due to increasing temperatures and increasingly frequent drought conditions. Under the Imported Water Alternative, during lower flow periods, the water diversion may be expected to result in noticeable recreation condition changes for the region's recreational anglers which can be expected to worsen in the future as a result of climate change effects. Although the extent of the potential adverse impact on recreational fishing conditions, experiences, and activity levels cannot be quantified, even a limited 5% decrease in recreational use during could be expected to correspond to a \$2.2 million direct economic loss during affected years.

Increased Groundwater Levels

The Project will improve the local groundwater basin levels and conditions by recharging these basins with APW. The augmentation of the basins with APW on a consistent basis will maintain and improve groundwater levels (i.e. higher water tables and reduced depth to groundwater). This will benefit local well water users by reducing their pumping energy use and utility costs. An estimated 438 households and businesses rely on domestic wells as their source of water in the West Lemmon Valley hydrographic basin.

Flood Reduction

As discussed under Criteria 2, the Project will also significantly reduce existing RSWRF effluent discharges by 2 MGD to Swan Lake, a closed basin playa that has experienced flooding in recent years which has caused major property damage and disruptions to area residents' quality of life. In addition to damage on properties, flooding can also cut off access to utilities, emergency services, transportation, and may impact the area's overall economic well-being. During 2017, the largest water year on record, there was unprecedented flooding in the North Valleys leading to millions of dollars in damages, reconstruction, and flood protection improvements. The Project's diversion of current effluent discharges from Swan Lake will reduce the likelihood and severity of future flood events and flood-related damages to their properties.

Evaluation Criterion 4 – Presidential and Department of the Interior Priorities

Combating the Climate Crises: E.O. 14008: Tackling the Climate Crisis at Home and Abroad, focuses on increasing resilience to climate change and supporting climate-resilient development. Please describe how the project will address climate change, including the following:

1. Please provide specific details and examples on how the project will address the impacts of climate change and help combat the climate crisis.

To help combat the climate crisis, TMWA and its partners selected a biological-carbon treatment system, in part, on lower energy requirements, thus reducing the energy needs and greenhouse gas emissions associated with higher energy consumption treatment technologies like RO. The Project also eliminates the need to export 2,000 AFA of Truckee River resources to the North Valleys, which will leave more water in the Truckee River system. While this amount of water may seem small, it can be highly beneficial during drought years when river flows are drastically reduced, which is anticipated to happen more frequently with climate change. Finally, as described in more detail below, the Project creates 2,000 AFA of drought proof water supply and a up to 11,000 AF groundwater bank that can be utilized to combat drought impacts caused by climate change.

2. Does this proposed project strengthen water supply sustainability to increase resilience to climate change? Does the proposed project contribute to climate change resiliency in other ways not described above?

One of the main Project objectives is to increase water supply sustainability and resiliency in response to climate change impacts in the Truckee Meadows region. The Truckee River watershed and flows in the Truckee River are dependent on snowpack and upstream reservoir storage. In the 2020-2040 Water Resource Plan, TMWA modeled climate change scenarios through the end of the century that looked at water supply availability caused by changes in snowpack and reservoir storage. Under a high carbon emissions scenario, results indicate that TMWA could have shortages in supply towards the middle of the century at a demand level of approximately 113,000 AF as shown in **Figure 9**. Figure 9 Additionally, the model results show shortages occurring over the last 14 years of the run from 2085 through 2098 as Lake Tahoe is projected to be below the rim in some of the models for the last 16 years. This means that natural river flows could be drastically decreased, and TMWA would need alternative water supply options.

Overall, the modeling shows an increased potential for hydrologic volatility. The duration of droughts could be noticeably longer than has been seen historically on the Truckee River watershed, and the droughts would likely be more extreme on the bases of this scenario. The modeling used a conservative approach, and new and innovative strategies to manage regional water resources were not incorporated. To further increase the resiliency of the region's water supply, it is critical to continue to develop options, such as this Project, to increase the availability of off-river resources to have as available options during drought periods.

The Project will enhance the region's water supply resiliency to help address future climate change uncertainties, such as longer growing seasons, changes to snowpack, and changes in the timing of runoff. The 11,000 AF of storage created by the Project is effectively drought proof and does not suffer any evaporative losses, like surface water reservoirs. Unlike groundwater and Truckee River water, the source wastewater for the Project is constantly being produced, even during droughts. The water produced by the Project will be committed over time, but during the time frame where the water is not committed, TMWA will create a drought storage supply in the aquifer of up to 11,000 AF. This additional resource provided by the

Project is resistant to climate change impacts and will provide additional flexibility to manage through droughts for TMWA’s entire service area.

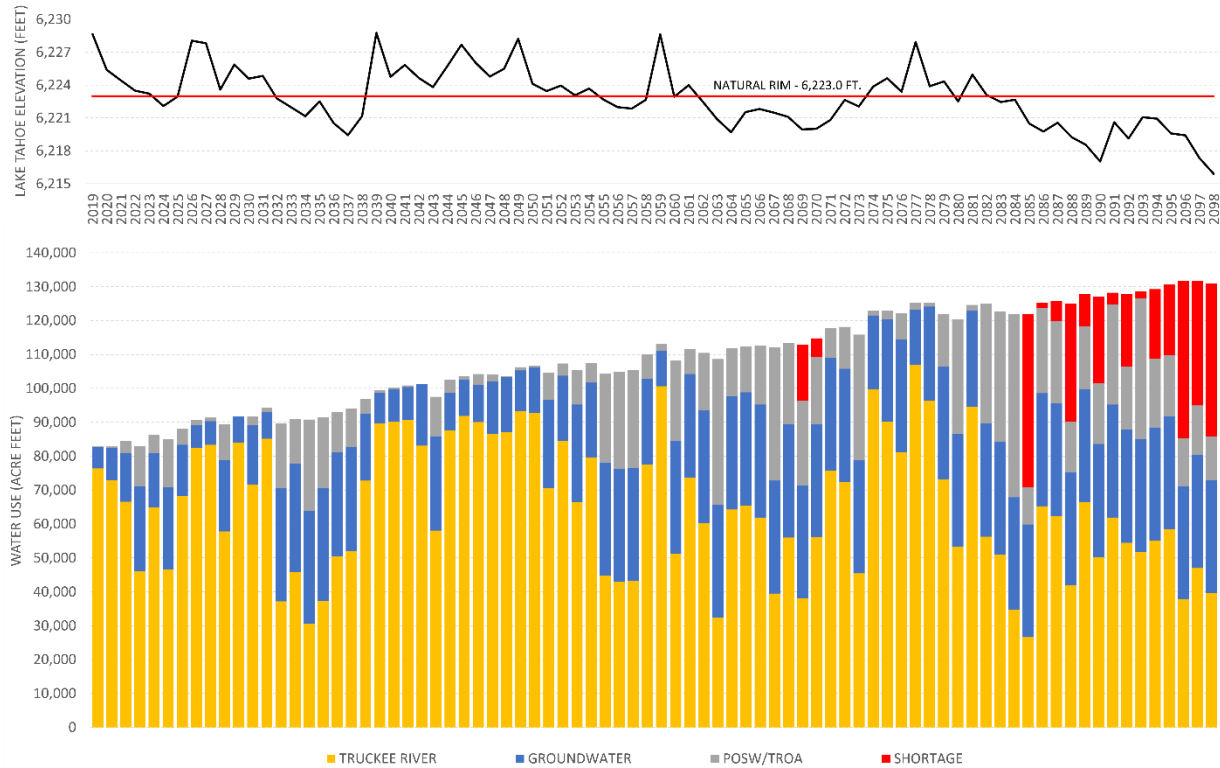


Figure 9. High Emissions Scenario Results

Disadvantaged or Underserved Communities: Points will be awarded based on the extent to which the project directly serves disadvantaged, underserved, or Tribal communities.

3. If applicable, describe how the project benefits those disadvantaged or underserved communities identified using the tool. For example, does the project improve water quality, provide economic growth opportunities, improve or expand public access to nature, or provide other benefits in a disadvantaged or underserved community?

There are approximately 25 *disadvantaged community census tracts* identified in the tool that are located in TMWA’s service area. The Project will help economic conditions in the region by providing temporary job opportunities during construction and permanent job opportunities once the Project facility is operational. Additionally, the Project will improve water supply reliability for the region, ensuring that everyone in the community continues to have access to clean, safe drinking water. Housing affordability is a concern in multiple census tracts throughout the Truckee Meadows. The Project will provide a new water supply and effluent management capacity for the region, which will allow additional homes to be constructed which will increase the supply of housing.

From an environmental perspective, the Project will help keep water resources in the Truckee River watershed which benefits the river system and the downstream tribal communities. Additionally, the Project will improve the water quality of Swan Lake because all water treated at RSWRF will have added treatment steps including dissolved air flotation, dual media filtration, and ultraviolet disinfection. This improved quality

will benefit the Swan Lake Nature Study Area, a protected wetland habitat and designated Nevada Important Bird Area, and may encourage more public usage and access to the area.

Tribal Benefits: Points will be awarded based on the extent to which the Project will honor the Federal government’s commitments to Tribal Nations.

1. Does the proposed project directly serve and/or benefit a Tribe? Will the project improve water management for a Tribe?
-

Under TROA, a portion of TMWA’s drought supplies stored in upstream reservoirs can convert to fish credit water which is managed by the PLPT for the benefit of fisheries that are culturally significant. This conversion occurs during non-drought years. By adding the additional 2,000 AFA from this Project for drought storage, TMWA could use the Project water before other upstream drought supplies, which may increase the amount of TMWA water that converts to fish credit water and becomes available to the PLPT to manage for fishery benefits.

2. Does the proposed project support Tribal resilience to climate change and drought impacts or provide other Tribal benefits such as improved public health and safety by addressing water quality, new water supplies, or economic growth opportunities?
-

The PLPT uses water stored in upstream reservoirs to manage flows and water quality for the downstream fisheries. These flows are especially important in drought years to ensure that the Lahontan cutthroat trout and Cui-ui fishery populations do not collapse due to low river flows. The Project will ensure that more water stays in the Truckee River watershed instead of being exported to the North Valleys which could help downstream water rights holders, such as the PLPT. As the climate changes, more prolonged and intense droughts are anticipated in the region and additional water in the river system will be beneficial.

3. Does the proposed project support Reclamation’s Tribal trust responsibilities or a Reclamation activity with a Tribe?
-

The Project supports Reclamation’s Tribal trust responsibilities by helping manage water resources in the region more efficiently and helping to ensure more water stays in the Truckee River watershed. Reclamation manages several of the upstream storage reservoirs on the Truckee River system including Lake Tahoe and Boca, Stampede, and Prosser Reservoirs. The PLPT stores water in the federally-owned reservoirs for fisheries management and ecological benefits. The Project will ensure that additional water is not exported out of the Truckee River watershed, which will help all water rights holders on the river, including the PLPT.

Evaluation Criterion 5 – Obligations and Watershed Perspective

Subcriterion No 5a – Reclamation’s Legal and Contractual Water Supply Obligations

1. Explain how the Project relates to Reclamation’s mission and/or serves a Federal interest. Does the Project help fulfill any of Reclamation’s legal or contractual obligations such as providing water for Indian Tribes, water right settlements, river restoration, minimum flows, legal court orders, or other obligations?
-

Reclamation operates the reservoirs on the Truckee River consistent with TROA. The Project allows Reclamation to further the interests of TROA and to benefit the PLPT as described in detail below. The Project area is in the Truckee River watershed, which spans California and Nevada and encompasses approximately 3,060 square miles. The Lake Tahoe Basin is part of the Truckee River watershed, with the

Truckee River being the only outlet of Lake Tahoe. The length of the Truckee River is 121 miles from Lake Tahoe to its terminus at Pyramid Lake. The overview of the Truckee River System is shown in **Figure 10**.

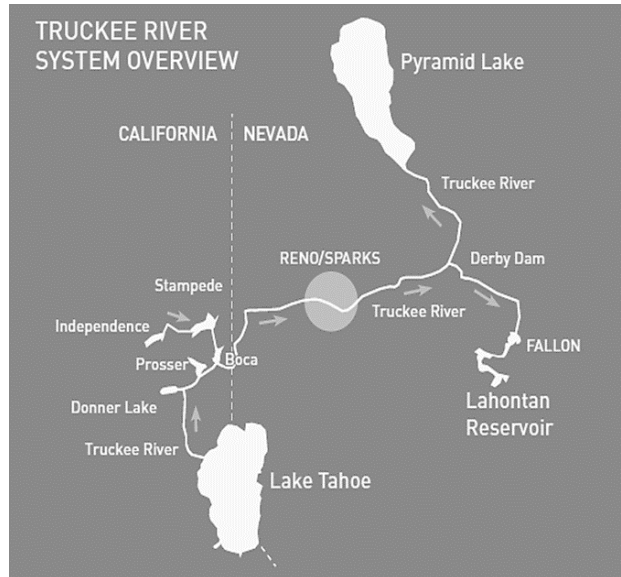


Figure 10. Truckee River System Overview

Reclamation is responsible for operating the upstream reservoirs to implement TROA. TROA, implemented in 2015, governs Truckee River operations. The Federal Water Master manages reservoir releases and water flow in the Truckee River system to ensure the operating requirements under TROA are satisfied for all water rights holders, including TMWA. TROA provides for modified river and reservoir operations that result in multiple benefits for water users, including benefits to endangered fish and significant improvements in drought storage for TMWA. TROA also satisfies the Truckee-Carson-Pyramid Lake Water Rights Settlement Act signed by Congress in 1990. The five signatory parties of TROA include California, Nevada, TMWA, the PLPT, and the US Department of the Interior. TROA addresses two key elements that differentiate it from former operations: 1) the ability of a water right holder, such as TMWA, to exercise a portion of its water rights by storing water (credit water) that would otherwise have been released from storage or passed through the reservoirs to the Truckee River; and 2) the ability to exchange (or trade) stored water between Truckee River reservoirs.

The Project is consistent with TROA and allows TMWA additional flexibility to leave more water in upstream storage for drought purposes and the ability for that water to convert to fish credit water. As explained above, fish credit water is available for the PLPT to manage for fisheries benefits. In non-drought situation years, TMWA’s non-firm stored water above the base amount is automatically converted to fish credit water, which can be used by the United States and PLPT for the recovery of endangered fish and to support the fishery in the lower Truckee River.

Subcriterion No. 5b – Watershed Perspective

1. Does the Project implement a regional or state water plan or an integrated resource management plan? Explain.

The Project implements priorities identified in several regional water resource plans, including the Western Regional Water Commission’s 2020-2040 Comprehensive Regional Water Plan, TMWA’s 2020-2040 Water

Resource Plan, and the City of Reno and Washoe County's Lemmon Valley-Stead Wastewater Facility Plan. The Project is specifically *identified as a future critical resource and/or project* in each of the listed plans.

These documents outline several goals related to technical, environmental, and social issues discussed below. The American Flat Project contributes to all these goals. Furthermore, the Project is the Truckee Meadows region's top priority for water infrastructure implementation.

Technical and environmental regional goals include:

- Creating a local, reliable, drought-proof water source.
- Reducing reliance on the Truckee River surface water and imported groundwater supplies for municipal water uses.
- Enhancing Truckee River water quality and quantity
- Improving fish and aquatic habitats.
- Providing a sustainable regional water supply
- Critically enhancing the region's water supply resiliency to help address the future uncertainties of climate change, such as extended growing seasons, snowpack changes, and snowmelt runoff timing.

Social goals linked to water include:

- Providing affordable drinking water and sanitary sewer services.
- Supporting skilled construction and utility operations careers.
- Creating workforce development initiatives supporting entry-level workers and apprenticeships.
- enhancing the stewardship of cultural resources.
- Valuing environmental protections.
- Providing an array of opportunities for public engagement and water-education opportunities.
- Supporting students and researchers at University of Nevada Reno (UNR).

2. Does the Project help meet the water supply needs of a large geographic area, region, or watershed? Explain.

The American Flat Project helps meet the water supply needs of the entire Truckee Meadows region and has watershed-scale benefits. The geographic scope of TMWA's retail service area covers a large geographic area of 162 square miles with more than 440,000 customers. TMWA also provides wholesale service to the Sun Valley General Improvement District. Refer to **Figure 1** for TMWA's current service area. Additionally, the Project benefits the Truckee River watershed by leaving 2,000 AFA in the basin instead of exporting the water to the North Valleys area. That water will benefit downstream water rights holders and help protect the ecology of the river.

3. Does the Project promote collaborative partnerships to address water-related issue? Explain.

The Project serves as a model for interagency collaboration through OneWater Nevada. OneWater Nevada is a collaboration between regional agencies, exploring a comprehensive approach to extending the resiliency and sustainability of local water resources for future generations. This approach takes into account the interconnected nature of water systems and seeks to balance the community's needs with the protection and preservation of natural resources. Multiple entities have worked collaboratively to get the Project to its current phase, including the partners listed in **Table 11**.

Table 11. American Flat Project Sponsors and Partners

Public Agency	Project Sponsor	Project Partner	OneWater Nevada Partner
Truckee Meadows Water Authority	✓	✓	✓
City of Reno		✓	✓
City of Sparks			✓
Washoe County			✓
University of Nevada, Reno			✓
Western Regional Water Commission			✓
Northern Nevada Water Planning Commission			✓
Truckee Meadows Water Reclamation Facility			✓

4. Include public outreach and opportunities for the public to learn about the project? Explain.

The primary objective of public outreach efforts related to the Project is to gain both public and stakeholder acceptance for a water-treatment technology that is novel for the region. TMWA and the City of Reno under the OneWater Nevada initiative have engaged in a phased approach to this effort.

The main goals of the outreach effort include the following:

- Engage identified audiences with clear information about the Project need and benefits, and how it fits into our comprehensive water resource management approach.
- Introduce the concept of augmenting the water supply with APW.
- Foster a regional appreciation for, and trust in, the use of APW to give the region a more sustainable and resilient water future.

Initially OneWater Nevada presented at boards, councils, and other meetings over the course of the Program’s development, to provide transparency and coordinate work efforts with its various partners. Through participation in these meetings, key information about the APW feasibility study has become part of the public record for interested or concerned citizens.

As the nature of the Project transitioned from a feasibility study to facility planning, the OneWater Nevada communications team has developed numerous engagement tactics, tailored to address the needs and concerns of a wider audience, including the public. Below is a list of communications tools and strategies developed so far:

- Website with regular updates. See: <https://onewaternevada.com/>
- Presentation slides/materials
- Email updates
- Fact sheets/FAQs
- Social media postings
- Articles in TMWA/Reno newsletters
- Community or neighborhood meetings and stakeholder meetings
- Informational display boards for presentations and community meetings
- A mobile educational trailer “wrapped” with graphics/content and interior displays, to bring messaging to schools, events, community meetings, etc. (Figure 11)

- Media interviews
- TMWA bill inserts
- Tours for elected officials and key decision makers to similar projects in other states
- Tours of the project site when appropriate, for stakeholders and interested groups
- Message/talking points for elected officials, and partner agencies
- Groundbreaking and ribbon cutting events, when construction work begins



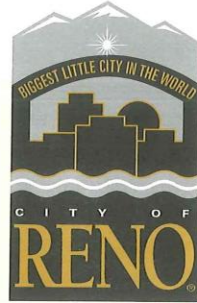
Figure 11. Public outreach presentation and educational trailer

Project Budget

Funding Plan & Letters of Commitment

TMWA and the City of Reno are committed to designing, constructing, and operating the American Flat Project for at least 50 years to address regional effluent management, reduction of discharge into Swan Lake, and to produce a new climate resilient drought supply. In accordance with the NOFO requirements, information regarding the funding plan for Project component costs that will be completed under an award for this NOFO and for the entire Project are provided below.

TMWA is party to an Agreement with the City of Reno for the Project's design, planning, construction, and operation costs. The Agreement allocates cost and responsibilities between TMWA and the City of Reno. TMWA and City of Reno are willing and able to pay for their share of capital costs and the full operation, maintenance, and replacement costs for the American Flat Project. The construction and operation of this Project, through the ongoing partnership with City of Reno, is part of TMWA's long-term resource resiliency plan. The Project has both community and Board support to move forward. From a financial perspective, TMWA and the City of Reno can fund the American Flat Project from a combination of cash reserves, developer fees, customer rates, or debt financing through State Revolving Funds (SRF) or Water Infrastructure Finance and Innovation Act (WIFIA). Below is the City of Reno's letter demonstrating their financial commitment to fund this Project.



Doug Thornley
City Manager
(775) 334-2020
thornleyd@reno.gov
www.reno.gov

*"Creating a community that
people are proud to call home."*

TRUCKEE MEADOWS
NOV 28 2023
WATER AUTHORITY

November 21, 2023

John Zimmerman
General Manager
Truckee Meadows Water Authority
1355 Capital Blvd., Reno NV 89502

Dear Mr. Zimmerman,

This letter is being provided to Truckee Meadows Water Authority (TMWA) to fulfill the requirements of the Bureau of Reclamation WaterSMART XVI Grant Application for the Advanced Purified Water Facility Project at American Flat (Project).

Pursuant to the "Interlocal Agreement for the Advanced Purified Water Facility Project at American Flat" approved by Reno City Council on November 10, 2021, and updated project cost estimates identified in the memorandum to Reno City Council on October 25, 2023, Reno's anticipated share of the Project is \$154,612,500. The City of Reno, subject to the approval of the construction award by City Council, will fund the Project using cash-on-hand, Clean Water State Revolving Fund, Water Infrastructure Finance and Innovation program funding, traditional bond financing, or a combination of these options. Before any construction contract related to the Project is awarded, the City of Reno must identify, with specificity, the manner in which this capital contribution would be fulfilled, and negotiate an administration and operating agreement with TMWA.

Sincerely,

Doug Thornley
City Manager

CC: Vicki Van Buren, Finance
Trina Magoon, Utility Services
Kerrie Koski, Public Works

Project Costs Under NOFO (R23AS00464)

TMWA is requesting funding to support permitting, design, program management, construction management, engineering during construction, and construction activities for American Flat as described in [Table 12](#).

Table 12. Summary of Total Eligible Costs

CATEGORY	TOTAL COSTS
Design	\$9,184,469
Lands	\$163,970
Project Management	\$14,309,684
Permitting	\$469,846
Planning	\$1,452,031
Construction	\$183,790,012
Total	\$209,370,012

Project costs that are eligible for funding under this NOFO began on March 9, 2022 when American Flat’s Title XVI Feasibility Study was approved by Reclamation. American Flat’s Title XVI Feasibility Study has been reviewed and approved by Reclamation.

The total costs of tasks that are planned to occur between March 9, 2022 and December 2027, are **\$209,370,012**. American Flat stakeholders are requesting \$30 million (the maximum award amount) under this NOFO and are committed to a cost share of \$176,370,012 (the balance of total costs under this NOFO). The Project partners also received additional federal funding in the form of a \$3 million Community Grant from the EPA, which is being used for planning and design work. As shown in [Table 13](#), TMWA will pay 30% of the total balance and the City of Reno will pay the remaining 70%.

Table 13. Summary of Non-Federal and Federal Funding Sources

ENTITY TYPE	FUNDING SOURCE	AMOUNT
Non-Federal	Truckee Meadows Water Authority	\$52,911,004
	City of Reno	\$123,459,008
Non-Federal Subtotal		\$176,370,012
Other Federal Entities	EPA Community Grant Fund	\$3,000,000
Requested Reclamation Funding	R23AS00464	\$30,000,000
Federal Subtotal		\$33,000,000
Project Total		\$209,370,012

Total Project Costs

Detailed below in the Budget Proposal and Budget Narrative sections, the estimated total cost for the American Flat Project is \$209,370,012. The Project sponsors intend to fund the Project entirely through dedicated cash reserves, developer fees, customer rates, and debt financing through SRF or WIFIA loans.

Dedicated cash reserves consist of two items: TMWA's unrestricted cash balances, the balance of which was approximately \$152 million as of fiscal year ended June 30, 2023, and TMWA's Water Resource Sustainability Program, which had \$6 million as of June 30, 2023. These dedicated cash reserves will be used to fund the Program up-front, with reimbursement coming from the following:

- **Developer fees:** Consisting of an allocation of \$755 per gallon per minute added to an existing Water Service Facility charge referred to as Supply and Treatment, this fee will be assessed to all new construction in the service territory and is expected to generate approximately \$10 million over 10 years.
- **Debt financing:** If required, although not expected, TMWA can issue debt financing through the EPA's SRF program. The local administration of this program is through NDEP, which has demonstrated significant interest and ability to fund the Project.
- **City of Reno funding:** The City intends to fund its portion of the Project through sewer fund and debt financing, such as the SRF or WIFIA programs. TMWA, as the Project sponsor, has confidence in the City of Reno's ability to fund the Program.

Budget Proposal

Table 14. Total Project Budget Proposal

CATEGORY	2022	2023	2024	2025	2026	2027	TOTAL
Administration	\$670,649	\$2,342,908	\$4,491,684	\$10,411,602	\$6,055,125	\$5,791,531	\$29,763,498
Building				\$21,614,785	\$7,997,368	20,966,572	\$50,578,725
Construction Management				\$1,741,667	\$1,741,667	\$1,741,667	\$5,225,000
Cost, Schedule, Value Engineering			\$558,938	\$558,938			\$1,117,876
Design		\$1,980,381	\$1,986,381	\$1,980,381			\$5,947,143
Environmental Services			\$375,000	\$375,000			\$750,000
Equipment			\$7,670,000	\$14,384,115	\$9,453,097	\$2,807,310	\$34,314,521
Independent Expert Panel			\$33,157	\$33,157			\$66,314
NV Energy				\$750,000	\$250,000		\$1,000,000
Permitting			\$159,923	\$234,923	\$50,000	\$25,000	\$469,846
Pipeline				\$1,449,108		\$17,764,600	\$19,213,708
Preconstruction Services			\$530,325	\$421,375			\$951,700
Procurement			\$154,572	\$154,572			\$309,143
Project Management			\$246,559	\$1,072,021	\$825,462	\$825,462	\$2,969,503
Property Acquisition			\$31,985	\$131,985			\$163,970
Research and Development	\$484,130	\$147,270					\$631,400
SCADA/Electrical			\$90,999	\$9,460,847	\$2,019,871		\$11,571,717
Sitework					\$11,026,865	\$15,239,380	\$26,266,245
Stormwater Design			\$58,589	\$58,589			\$117,177
System Integration				\$825,000			\$825,000
Technical Services				\$800,000			\$800,000
Testing/Inspection				\$4,950,000			\$4,950,000
Utility Staff				\$3,868,707	\$3,868,707	\$3,630,113	\$11,367,527
Grand Total	\$1,154,779	\$4,470,559	\$16,388,111	\$75,276,769	\$43,288,161	\$68,791,633	\$209,370,012

Budget Narrative

Personnel

TMWA Engineering and City of Reno staff will be utilized for a portion of Project management during design and construction. TMWA's Director of Engineering, Danny Rotter, P.E. will be the Principal in charge with Project Management and Engineering staff support. Between TMWA and City of Reno staff, TMWA has planned for 35,000 person hours of support over seven years. At times of peak support during design reviews and peak construction periods, the total number of staff working on the Project will increase. TMWA plans to support Project management with consultants. The TMWA and City of Reno estimated staff time allocated to the Project is provided in detail in **Table 15**. These salaries and wage estimates include labor, benefits, and overhead.

Table 15. Estimated TMWA and City of Reno Staff Salaries and Wages

Job Title	Hours	Hourly Rate	Total Cost
Chemist	36	\$224	\$8,145
City of Reno Engineer	1,820	\$314	\$571,676
City of Reno Ops/Maintenance	1,414	\$224	\$317,220
City of Reno SCADA Tech	148	\$359	\$53,312
CSE	61	\$314	\$19,040
Electricians	1,209	\$269	\$325,584
Emerging Resources Program Admin.	2,603	\$314	\$817,768
Equipment Specialist	1,012	\$224	\$227,120
Facilities	1,800	\$224	\$403,920
Finance	227	\$224	\$51,000
Generator Tech	55	\$224	\$12,240
Human Resources	5	\$224	\$1,020
Hydrogeologist	1,085	\$314	\$340,816
Inspector	3,458	\$224	\$775,880
Information Technology	76	\$269	\$20,400
Mechanics	4,761	\$314	\$1,495,592
Operator	5,164	\$314	\$1,622,208
Public Relations	121	\$314	\$38,080
Purchasing and Contracts Supervisor	131	\$314	\$41,174
SCADA Tech	3,550	\$314	\$1,115,268
Security	97	\$314	\$30,464
Risk Register Misc. Personnel	106	\$224	\$23,800
TMWA Engineer	6,063	\$314	\$1,904,714
Grand Total	35,000		\$10,216,441

Fringe Benefits

Fringe benefits includes public employees retirement system contributions, medical, dental and vision insurance contributions, employer match portion of defined contribution retirement plan payments, paid employee leave, federal employment tax and workers' compensation premiums. These rates are included in the wages presented in [Table 15](#).

Travel

Travel is not part of the Project, and no travel expenses are included in the budget.

Equipment

The budget proposal assumes all equipment for the Project will be rented or owned by the construction contractor. Equipment costs are shown in the "Equipment" line item of the budget proposal, but equipment purchases will be included in the contractual costs.

Materials and Supply

Similar to the Project equipment budget, all materials and supplies are to be assumed to be included in the construction contractor costs. Due to current supply chain constraints, TMWA will explore early material bidding and acquisition if financially beneficial to the project and construction schedule.

Contractual

Contract expenses include planning, funding and financing, permitting, design work, program management, construction management, and construction activities. TMWA will use open and competitive delivery methods to complete the construction of the Project. Minimum qualifications for contractors include being properly licensed to do business in the State of Nevada. Project specific criteria for contractors will be defined within the solicitation to complete the Project. Construction costs will include labor, equipment, materials and supplies, bonds, and insurance. Construction estimates are based on the 30% independent cost estimate.

Other Expenses

At this time, we do not anticipate any other expenses associated with this project that are not included in the budget proposal as presented.

Indirect Costs

TMWA and the City of Reno will follow their standard internal services cost allocation processes which are presented as the indirect costs portion of the budget. Internal services includes support from such departments as Accounting/Finance, Legal, Management, Lands, Geographic Information Systems (GIS), Business Information Systems, and Information Technology.

Total Costs

The total eligible cost of the American Flat Project under this NOFO is \$209,370,012. Of this amount, TMWA and City of Reno are committed to a cost share of \$176,370,012. We respectfully request \$30,000,000 from Reclamation under this NOFO. Please see [Table 13](#) for the proportion of Non-Federal and Federal funding.

Environmental & Cultural Resources Compliance

Will the proposed Project impact the surrounding environment (e.g. soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the Project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.

The Project area comprises three sites: the APWF site (APN 550-380-03), a water pipeline from the APWF to American Flat, and the American Flat site (APN 079-332-37). As part of the project proponent's application for funding from the NDEP, environmental review (ER) of the proposed project is underway. The ER will determine whether any sensitive environmental resources are present in the project area and determine the potential effects of the proposed project on those resources and the environment. Preliminary findings from ER are referenced as applicable to this question, and the questions below.

Construction activities at the proposed project sites would include clearing and grubbing in preparation for construction of the APWF; open cut trench for installation of the water pipeline, and clearing and grading in preparation for construction of the injection and extraction wells at American Flat. A Stormwater Pollution Prevention Plan (SWPPP) will be prepared prior to the initiation of construction activities for the project, and all erosion controls, dust controls, and best management practices (BMPs) will be implemented.

Based on current knowledge and expected outcomes of ER and further technical studies, the proposed project is not anticipated to impact the surrounding environment (e.g., soil, air, water) or animal habitat. No significant environmental effects are expected, and no unique environmental risks are present. There are no expected negative impacts to water quantity and quality or to animal habitat.

Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the Project area? If so, would they be affected by any activities associated with the proposed Project?

The Project sites were screened through field surveys and desktop analysis for the potential presence of biological resources, including plant and wildlife species listed or proposed to be listed as Federal threatened or endangered species or designated critical habitat (e.g., habitat suitable for these species). Based on the screening, no sensitive biological resources, including endangered or threatened species, would be adversely affected by activities associated with the proposed project. Any potential temporary construction-related impacts to species and/or habitat suitable for these species would be avoided and/or minimized through implementation of avoidance and minimization measures (AMMs) that would include worker environmental awareness program and preconstruction surveys to determine the presence of special-status species with a potential to occur in the project area.

Are there wetlands or other surface waters inside the Project boundaries that potential fall under Clean Water Act (CWA) jurisdiction as "Waters of the United States"? If so, please describe and estimate any impacts the proposed Project may have.

The Project sites were screened through field surveys and desktop analysis for the potential presence of Waters of the United States (WOTUS) subject to Federal jurisdiction. Based on the screening, no WOTUS

are present inside the proposed project boundaries. Any potential temporary construction-related impacts to other surface waters (e.g., Horse Creek and/or dry stormwater drainages) would be avoided and/or minimized through implementation of AMMs that would include requirements of local ordinances and codes (e.g., Working in Water Ways permit), a SWPPP, and/or appropriate BMPs.

When was the water delivery system constructed?

The TMWA water delivery system was originally constructed in approximately 1960. Over the years, there have been replacement projects, upgrades, and additions made to the water delivery system. The proposed project would further enhance the existing water delivery system as a vital and sustainable water reuse initiative that helps the City of Reno, TMWA, and its regional partners take full advantage of the recycled water produced at RSWRF. The proposed Project would be constructed by the project proponents starting at the earliest 2025.

Will the proposed Project result in any modification of or effects to, individual features of an irrigation system (e.g. headgates, canals, or flumes)? If so state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.

Currently, the proposed Project does not contemplate modifications of or effects to individual features of an irrigation system.

Are there any buildings, structures or features in the irrigation district listed or eligible for listing on the National Register of Historic Places?

An information search of the Nevada State Historic Preservation Office (SHPO) Nevada Cultural Resource Information System (NVCRIS) database has been conducted to identify GIS shapefiles and documentation of previous cultural resources investigations that have been conducted both within and near the project area. As part of the initial ER, pedestrian surveys of the area of potential effects (APE) were conducted to determine the presence of historic properties that may be adversely affected by project implementation. Six sites were recorded within or directly adjacent to the project area. With the exception of one prehistoric site, all have been determined or recommended not eligible for inclusion in the National Register of Historic Places (NRHP). The prehistoric site would be protected through AMM requiring that the area be delineated as an environmentally sensitive area (ESA) with fencing in place.

A cultural resources report will be suitable to support preparation of the ER, consultation with SHPO, and future consultations with federal agencies, if required. Further, consultation with NDEP with SHPO will occur, including consultation on the APE and assessment of effects to historic properties, i.e., those eligible for inclusion in the NRHP.

Are there any known archeological site in the proposed Project area?

As discussed above, there is no current information indicating known archeological sites in the Project area based on archival research and field survey and there is a low potential that archaeological resources would

be encountered during the ground-disturbing construction activities. However, if archaeological resources were encountered during construction, they could be adversely impacted. To ensure the proper treatment of unanticipated finds prior to the start of construction, AMM would be implemented.

Will the proposed Project have a disproportionately high and adverse effect on low income or minority populations?

The Project site and the southern portion of the pipeline would be built in the North Valleys neighborhood. The American Flat Site and the northern segments of the pipeline would be constructed in unincorporated Washoe County, north of the North Valleys neighborhood. Based on review of the United States Census, these areas do not have substantial low income or minority populations. Therefore, the project area would not be located within minority or low-income neighborhoods and would not be anticipated to have a disproportionately high or adverse effect on low income or minority populations. The Project will help reduce increases to wastewater rates. Increased rates tend to have a larger impact on those that are economically challenged. In addition, the proposed project will render water available that is not currently available. It will also make the water supply more resilient, which will make the community less susceptible to the consequences of drought and climate change.

Will the proposed Project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?

The Project is not located within Tribal lands. As the Project is further developed and Federal funding is made available, or as Federal permitting is required, the project proponents will consult for the identification of Tribal Cultural Properties under Section 106 of the Federal Historic Preservation Act. If applicable, this consultation will be conducted during the preparation of the cultural resources inventory report.

Will the proposed Project contribute to the introduction, continued existence, or spread of noxious weeds or non-native species known to occur in the area?

The proposed Project sites screening for biological resources determined potential for state listed noxious weeds in the project area. However, it is unlikely that the proposed Project would contribute to the introduction or continued existence or spread of noxious weeds or non-native species. As applicable, any temporary construction-related impacts would be avoided and/or minimized through implementation of AMMs.

Required Permits or Approvals

Nevada Division of Environmental Protection

- Initial use of finished water for irrigation during testing and monitoring period requires a category A discharge permit from the NDEP Bureau of Water Pollution Control (BWPC).
- Upon the completion of testing and monitoring period, the injection operation requires a category A+ discharge permit from the NDEP BWPC.
- The injection operation also requires a groundwater Underground Injection Control (UIC) permit from NDEP's UIC Program.

- In addition, modification to RSWRF discharge permit is required to allow for effluent to be sent to new place of use.

Regional Agency Permit Requirements

City of Reno

- Planned Unit Development Amendment
- Special Use Permit
- Modification of RSWRF Discharge Permit with NDEP
- Building Permit
- Grading Permit
- Encroachment Permit

Washoe County Community Service Department

- Special Use Permit
- Building Permit
- Grading Permit
- Encroachment Permit

Reno-Tahoe Airport Authority

- Utility Easement
- Improvement Approval
- On-Airport Airspace Analysis

Northern Nevada Public Health

- Sanitary Sewer System Approval (NNPH)
- Pipeline separation review
- Water System Review and Approval
- Program Support

Permitting Strategy

Knowing permitting processes are often complicated and require collaboration with several authorizing agencies, the City of Reno and TMWA implemented several proactive strategies to allow for effective and timely permitting processes. Additionally, TMWA continues to meet with the regulatory agencies about the American Flat Project.

- From 2014 to 2016, *OneWater Nevada* partner agency staff participated on NDEP's Water Recycling Regulatory Review Steering Committee. Following a 2-year statewide collaborative process initiated by NDEP, in 2016, NAC 445A was revised to allow for injection of APW (NDEP category A+ reclaimed water) into groundwater aquifers.
- With establishment of the regulatory framework, pilot testing and field-scale demonstration studies were implemented with clear water quality objectives. NDEP and NNPH were engaged in the studies. Project leadership provided regular status reports to NDEP and NNPH staff.
- Since 2015, an independent expert advisor panel has assisted *OneWater Nevada* in shaping the Project's rationale, objectives, technical approaches, research, and public engagement and outreach initiatives.

- Project managers meet frequently with NDEP, NDWR, and NNPH permitting staff and administrators.
- Through webinars, tours, the website, public meetings, and peer presentations, Project representatives proactively provide technical, permitting, and policy information and seek input from elected officials, boards, councils, commissions, regulators, and water quality professionals.
- To maintain and accelerate the implementation schedule, Project planners, engineers, and scientists are continuously evaluating cultural resources, environmental impacts, right-of-way and easement issues, land use, construction permitting, APW treatment regulatory compliance requirements, and potential permitting disruptions.

Overlap or Duplication of Effort Statement

There is no overlap between the American Flat Project and any other active or anticipated proposals or projects in terms of activities, costs, or commitment of key personnel.

Conflict of Interest Disclosure Statement

TMWA has no actual or potential conflict of interest at the time application submission.

Uniform Audit Reporting Statement

TMWA did not expend \$750,000 or more in federal grant funds in its fiscal year, and therefore was not required to submit a Single Audit report for the most recently closed fiscal year.

References

Davis, A. & K. Moeltner, 2010. Valuing the Prevention of an Infestation: The Threat of the New Zealand Mud Snail in Northern Nevada, *Agricultural and Resource Economics Review*, Cambridge University Press, vol. 39(1), pages 56-74, February.

EPA, 2023. A Proposed Rule by the Environmental Protection Agency on 03/29/2023, *Federal Register*, Vol 88(60), pp.18638 – 18754.

Pohll, G., 2019. Lemmon Valley Groundwater Model, Technical Report of the Truckee Meadows Water Authority, 104p.

Porse, E., K.B. Mika, E. Litvak, K.F. Manago, T.S. Hogue, M. Gold, D.E. Pataki, and S. Pincetl, 2018. The Economic Value of Local Water Supplies in Los Angeles. *Nature Sustainability*, May. doi:10.1038/s41893-018-0068-2.

Truckee Meadows Water Authority, 2020-2040 Water Resource Plan. [Online] <https://tmwa.com/wp-content/uploads/2020/11/TMWA-WRP-2020-Final.pdf>

Letters of Project Support

Categorized Letters of Support

FEDERAL GOVERNMENT

- 1 **Mark Amodei** – Member of Congress NV-002; **Catherine Cortez Masto** – United States Senator; **Jacky Rosen** – United States Senator

LOCAL GOVERNEMENT / AGENCIES

- 2 **John Martini** – City of Sparks Assistant City Manager
- 3 **David M. Solaro** – Washoe County, Assistant County Manager
- 4 **Kim Rigdon** – Western Regional Water Commission, Program Manager

NON-PROFIT ORGANIZATIONS

- 5 **Mauricia M.M. Baca** – The Nature Conservancy, Nevada State Director
- 6 **Lisa Wallace** – Truckee River Watershed Council, Executive Director

Congress of the United States

Washington, DC 20510

December 5, 2023

The Honorable Deb Haaland
Secretary
U.S. Department of the Interior
1849 C Street NW
Washington, D.C. 20240

Dear Secretary Haaland:

We are writing in support of the Truckee Meadows Water Authority's (TMWA) grant application to the Title XVI Water Reclamation and Reuse program through the Bureau of Reclamation's (BOR) WaterSMART initiative. TMWA is the primary drinking water utility for the greater Reno-Sparks metropolitan area in northern Nevada. The Advanced Purified Water Facility at American Flat Project will provide communities in Washoe County with a new, locally controlled, and drought resistant water supply. BOR grant funding would support the permitting, design, and construction of the Project and assist the region in preparing for climate variability by helping diversify TMWA's drinking water supply and providing additional groundwater storage.

The City of Reno and TMWA have completed a Basis of Design Report for a 2 million gallon per day advanced purified water treatment facility to be associated with a Reno water reclamation facility. This advanced wastewater treatment and associated infrastructure will provide up to 2,000-acre feet per year of finished "Category A+" water for aquifer recharge. The Program benefits the community by developing a local, reliable, drought resistant water source, recharging the groundwater aquifer to address future uncertainty caused by climate change, and reducing treated wastewater currently being discharged to Swan Lake.

The Advanced Purified Water Facility at American Flat Project demonstrates strong local agency partnerships, leverages significant local funding, and includes innovative technology. The City of Reno and TMWA have spent over \$3 million in planning costs and have entered into an agreement to cost share the additional funding needed for planning, design, and construction.

We ask you give this application your full and fair consideration. Don't hesitate to reach out to any of us, or our staff, with any questions.

Sincerely,

A handwritten signature in blue ink that reads "Catherine Cortez Masto". The signature is fluid and cursive, with the first name being the most prominent.

Catherine Cortez Masto
United States Senate

A handwritten signature in blue ink that reads "Jacky Rosen". The signature is cursive and elegant, with the first name being the most prominent.

Jacky Rosen
United States Senate

A handwritten signature in black ink that reads "Mark D. Amodei". The signature is cursive and includes a long, sweeping underline that extends to the right.

Mark Amodei
United States House of Representatives



November 13, 2023

Secretary Deb Haaland
U.S. Department of the Interior
1849 C Street, NW
Washington, DC 20240-0001

Re: Support for Title XVI Water Reclamation and Reuse Program Grant Application

Dear Secretary Haaland,

I am writing in support of the Truckee Meadows Water Authority's (TMWA) grant application through the Bureau of Reclamation's (BOR) WaterSMART initiative, Title XVI Water Reclamation and Reuse program. TMWA is the primary drinking water utility for the greater Reno-Sparks metropolitan area in northern Nevada. The Advanced Purified Water Facility at American Flat Project (Project) will provide communities in Washoe County with a new, locally controlled and drought proof water supply. BOR grant funding would support the permitting, design and construction of the Project and assist the region in preparing for climate variability by helping diversify TMWA's water supply and providing additional groundwater storage.

The City of Reno and TMWA have completed a Basis of Design Report for a 2 million gallon per day advanced purified water treatment facility to be associated with a Reno water reclamation facility. This advanced wastewater treatment and associated infrastructure will provide up to 2,000 acre feet per year of finished *Category A+* water for aquifer recharge. The Program benefits the community by developing a local, reliable, drought proof water source, recharging the groundwater aquifer to address future uncertainty caused by climate change and reducing treated wastewater currently being discharged to Swan Lake. The Project also provides an opportunity to train a local workforce and investigate new advanced process control strategies with the operation of a full-scale advanced water purification production and recharge facility.

The Advanced Purified Water Facility at American Flat Project demonstrates strong local agency partnerships, leverages significant local funding and includes innovative technology. The City of Reno and TMWA have spent over \$3 million in planning costs and have entered into an agreement to cost share the additional funding needed for planning, design, and construction. Thank you for your consideration of this funding application.

Sincerely,

A handwritten signature in blue ink, appearing to read "Michael A. Drinkwater". The signature is fluid and cursive, with a long horizontal stroke at the end.

Michael A. Drinkwater, P.E.
Community Services Director



WASHOE COUNTY

OFFICE OF THE COUNTY MANAGER

1001 E. 9th Street
Reno, Nevada 89512
Phone: (775) 328-2000
Fax: (775) 328-2491
www.washoecounty.gov

November 27, 2023

Secretary Deb Haaland
Bureau of Reclamation, Department of the Interior
1849 C Street, NW
Washington, DC 20240-0001

Re: Support for Title XVI Water Reclamation and Reuse Program Grant Application

Dear Secretary Haaland:

I am writing in support of the Truckee Meadows Water Authority's (TMWA) grant application through the Bureau of Reclamation's (BOR) WaterSMART initiative, the Title XVI Water Reclamation and Reuse program. TMWA is the primary drinking water utility for the greater Reno-Sparks metropolitan area in northern Nevada. The Advanced Purified Water Facility at American Flat Project (Project) will provide communities in Washoe County with a new, locally controlled, and drought proof water supply. BOR grant funding would support the permitting, design, and construction of the Project and assist the region in preparing for climate variability by helping diversify TMWA's water supply and providing additional groundwater storage.

The City of Reno and TMWA have completed a Basis of Design Report for a 2 million gallon per day advanced purified water treatment facility to be associated with a Reno water reclamation facility. This advanced wastewater treatment and associated infrastructure will provide up to 2,000 acre feet per year of finished "Category A+" water for aquifer recharge. The Program benefits the community by developing a local, reliable, drought proof water source, recharging the groundwater aquifer to address future uncertainty caused by climate change, and reducing treated wastewater currently being discharged to Swan Lake. The Project also provides an opportunity to train a local workforce and investigate new advanced process control strategies with the operation of a full-scale advanced water purification production and recharge facility.

The Advanced Purified Water Facility at American Flat Project demonstrates strong local agency partnerships, leverages significant local funding, and includes innovative technology. The City of Reno and TMWA have spent over \$3 million in planning costs and have entered into an agreement to cost share the additional funding needed for planning, design, and construction.

Thank you for your consideration of this funding application.

Respectfully,

WASHOE COUNTY

David M. Solaro, Arch., P.E.
Assistant County Manager

November 17, 2023

Secretary Deb Haaland
Bureau of Reclamation, Department of the Interior
1849 C Street, NW
Washington, DC 20240-0001

Re: Support for Title XVI Water Reclamation and Reuse Program Grant Application

Dear Secretary, Haaland:


I am writing in support of the Truckee Meadows Water Authority's (TMWA) grant application through the Bureau of Reclamation's (BOR) WaterSMART initiative, the Title XVI Water Reclamation and Reuse program. TMWA is the primary drinking water utility for the greater Reno-Sparks metropolitan area in northern Nevada. The Advanced Purified Water Facility at American Flat Project (Project) will provide communities in Washoe County with a new, locally controlled, and drought proof water supply. BOR grant funding would support the permitting, design, and construction of the Project and assist the region in preparing for climate variability by helping diversify TMWA's water supply and providing additional groundwater storage.

The City of Reno and TMWA have completed a Basis of Design Report for a 2 million gallon per day advanced purified water treatment facility to be associated with a Reno water reclamation facility. This advanced wastewater treatment and associated infrastructure will provide up to 2,000 acre feet per year of finished "Category A+" water for aquifer recharge. The Program benefits the community by developing a local, reliable, drought proof water source, recharging the groundwater aquifer to address future uncertainty caused by climate change, and reducing treated wastewater currently being discharged to Swan Lake. The Project also provides an opportunity to train a local workforce and investigate new advanced process control strategies with the operation of a full-scale advanced water purification production and recharge facility.

The Advanced Purified Water Facility at American Flat Project demonstrates strong local agency partnerships, leverages significant local funding, and includes innovative technology. The City of Reno and TMWA have spent over \$3 million in planning costs and have entered into an agreement to cost share the additional funding needed for planning, design, and construction.

Thank you for your consideration of this funding application.

Sincerely,



Kim Rigdon, WRWC Program Manager



Protecting nature. Preserving life.™

THE NATURE CONSERVANCY

Northern Nevada Office
639 Isbell Road
Reno, NV 89509

Southern Nevada Office
8329 W. Sunset Rd., Ste. 200
Las Vegas, NV 89113

Tel 775-322-4990
Fax 775-322-5132

Tel 702-737-8744
Fax 702-737-5787

November 14, 2023

Secretary Deb Haaland
Bureau of Reclamation
Department of the Interior
1849 C Street, NW
Washington, DC 20240-0001

Dear Secretary Haaland:

I am writing to support the Truckee Meadows Water Authority's (TMWA) application for a grant through the Bureau of Reclamation's WaterSMART initiative, the Title XVI Water Reclamation and Reuse program. The funding would support the permitting, design, and construction of the OneWater Nevada Advanced Purified Program at American Flat (the Program). The Program will assist the region in preparing for climate variability by helping diversify TMWA's water supply and providing additional groundwater storage by using category A+ water that will be transported to the American Flat farm for up to 2,000 acre feet per year for aquifer recharge. The Program benefits the community by developing a local, reliable, drought resilient water source, recharging the groundwater aquifer at the American Flat site to address future uncertainty caused by climate change, and reducing treated wastewater currently being discharged to Swan Lake. The Program also provides an opportunity to train a local workforce and investigate new advanced process control strategies with the operation of a full-scale advanced water purification production and recharge facility.

The Advanced Purified Water Facility at American Flat Project demonstrates strong local agency partnerships, leverages significant local funding, and includes innovative technology. The City of Reno and TMWA have spent over \$3 million in planning costs and have entered into an agreement to cost share the additional funding needed for this important project.

The mission of The Nature Conservancy is to conserve the lands and waters on which all life depends. Sustainable water supplies for future generations of people and nature are critical in the water-limited state of Nevada. According to the Nevada Division of Water Resources, half of the administrative groundwater basins in Nevada are fully or over-committed. This means that the amount of assigned groundwater rights are at or above the perennial yield (estimated water available) in those basins. Almost 20% have more groundwater withdrawn than the perennial yield. The Lemmon Valley hydrographic area, where American Flat is located, is over-committed by more than 200% and had groundwater withdrawals above the perennial yield in 2017. Once water is pumped from the ground, it is not easily replaced, yet it is often thought as a "back-up" source of water when surface water resources drop due to drought and climate change. Finding solutions to improve water security is important for ensuring the availability of this precious resource for nature and people to avoid situations like dry wells, reduced river flows and the decimation of critical habitats and species. By using highly treated wastewater to recharge the groundwater aquifer, this project provides an innovative approach to improve groundwater availability without placing added pressure on limited water supplies.

For the aforementioned reasons, The Nature Conservancy in Nevada supports the WaterSMART initiative, Title XVI Water Reclamation and Reuse Program application submitted by the TMWA and respectfully request your favorable consideration.

Sincerely,

Mauricia M.M. Baca
Nevada State Director



November 27, 2023

Secretary Deb Haaland
Bureau of Reclamation, Department of the Interior
1849 C Street, NW
Washington, DC 20240-0001

Re: Support for Title XVI Water Reclamation and Reuse Program Grant Application

Dear Secretary Haaland:

The mission of the Truckee River Watershed Council is to bring the community Together for the Truckee to protect, enhance, and restore the Truckee River watershed. We identify, coordinate, fund, and implement restoration and preservation projects directly related to the watershed's health, beauty, and economy. We have a long history of collaboration with the Truckee Meadows Water Authority's (TMWA) and have partnered on numerous conservation and restoration projects.

I am writing in support of TWMA's grant application through the Bureau of Reclamation's (BOR) WaterSMART initiative. TMWA is the primary drinking water utility for the greater Reno-Sparks metropolitan area in northern Nevada. The Advanced Purified Water Facility at American Flat Project (Project) will provide communities with a new, locally controlled, and drought proof water supply. BOR grant funding would assist in preparing for climate variability by diversifying TMWA's water supply.

The City of Reno and TMWA have completed a Basis of Design Report for a 2 million gallon per day advanced purified water treatment facility to be associated with a water reclamation facility. The Project benefits the community by developing a local, reliable, drought proof water source, recharging the groundwater aquifer to address future uncertainty caused by climate change, and reducing treated wastewater. The Project also provides an opportunity to train a local workforce and investigate advanced process control strategies with the operation of a full-scale advanced water purification production and recharge facility.

The Project demonstrates strong local agency partnerships, leverages significant local funding, and includes innovative technology. The City of Reno and TMWA have spent over \$3 million in planning and have entered into an agreement to cost share additional funding.

Thank you for your consideration of this funding application.

Sincerely,

Lisa Wallace
Executive Director